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Archimedes triangle theory

See “Counter argument“ against Archimedes theory

Archimedes mathematical solution, which you can observe below, has been used as the correct formula until now. But as technology progresses so do our knowledge about older mathematical formulae, thereby these new theories presented in this book.

Chapter one

See the pages of sine - & cosine 45º

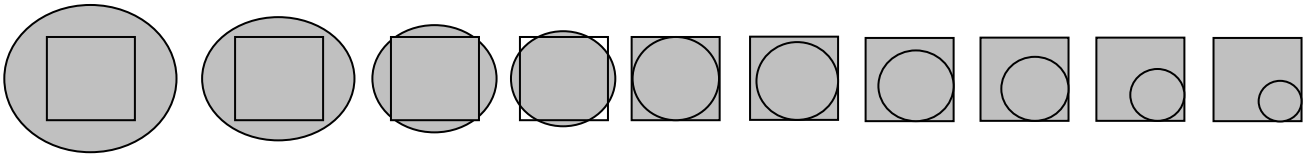
Look at cosine and sine 45º, there you can see the values given for triangles are dependence on cosine and sine.

But by redraw the Q-values for squares, every circle depend on its own square. *Q* presents a precentage of a inner circle that covers its own square. *4Q* define the relation between diameter and circumference. For further information read on the book.

Only chapter one of the document pi is presented in the homepage. Chapter two is not presented. Chapter 2 consists of 1. Radius, 2. Shaded areas, 3. Arch, 4. Stars, 5. Parablex and 6. Relationships between Cubes, Cylinders and Spheres.

Now we know two systems, one of which is the Archimedes formulae that calculate a polygon into a circle, and the second, presented in this book “The correct values for a circle”, how to calculate a circle.

With help of the formulae one can calculate how many percent a circle with a square or a square with a circle cover each others area when they are superimposed, see the pictures below!



Observe! When a number is divided by 2 and its product again divided by 2 and so forth the product will never reach nil.

10/2= 5/2= 2,5/2 1,25/2= 0,625/2 = 0,3125/2= 0,15625/2…

Make possible:

You only need a square or a triangle to build a polygon and, it tells you nothing about a circle!

See counter argument too.

The pictures help us to understand a polygon cannot form a circle! When a circle is split up or divided into very small pieces, what one receives are chords. Chords can never form a straight line. In part two, chapter 3 in the book you can read how to calculate a straight line into a chord and vice versa.

See “Counter argument against Archimedes theory“

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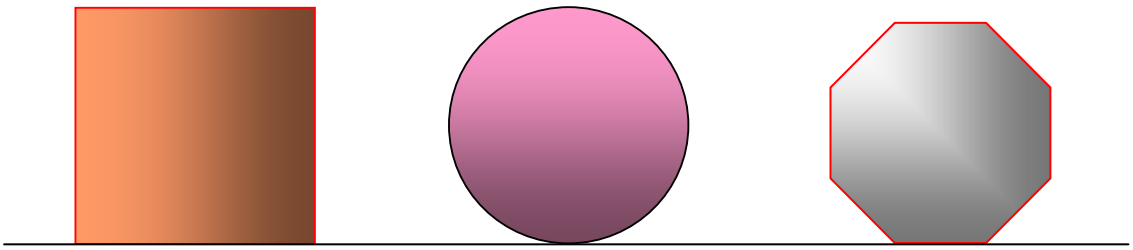
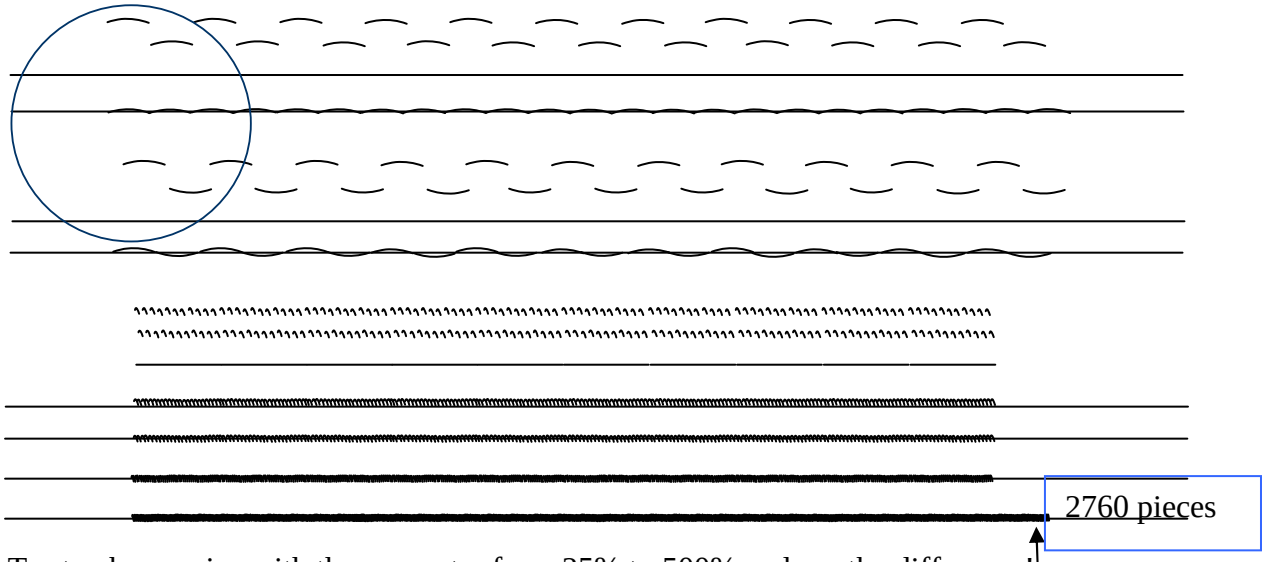
Small pieces of the circle: when you split up a circle the pieces can never form a straight line, see below. In the chapters “New mathematical formulae” and “Arch”, you can read how to calculate the small pieces of a circle.



Small pieces of the circle



Try to change size with the computer from 25% to 500% and see the difference!

Small pieces of the inner polygon of a circle.

Try to change the size with the computer from 25% to 500% and see the difference!

1. Take a look at the grading system 1, 2 & 3 to recall the values in these groups. If you choose other value or 3.141..., you have to go back to the grading-systems to see in which groups the value belongs.
2. One has to ask oneself why a chosen value is the same in the “squares grading-system and the circle grading-system” but not in the “cylinder grading-system”?
3. And also why the value 3.125 is in the same place in all three grading-systems?

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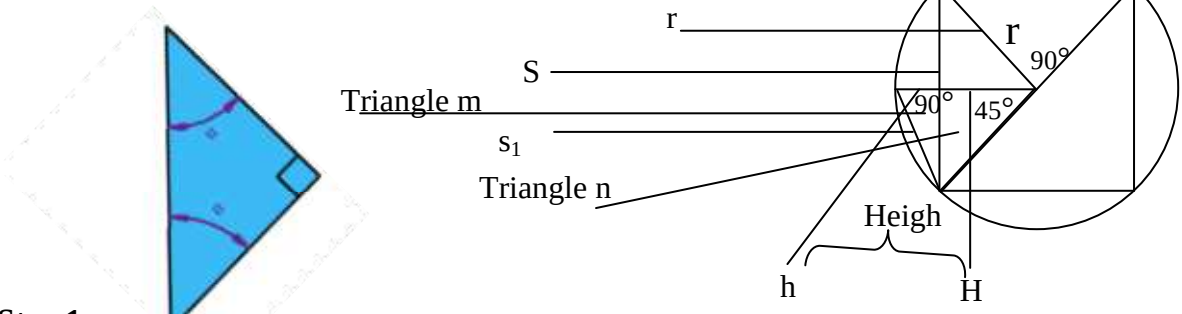
Chapter two

Step 1 Radius = 1 angle = 45°



Step 1

The first triangle in step one is an isoscelese-right triangle, it´s angle is 90° and radius 1. After one has calculated the area of the first triangle, in the next step the triangle turns to a right triangle with sides of different length.

Note in Archimedes theory that the sides had not halved, they are different; see the polygon's side numbers underlined. See "Counter argument against Archimedes theory"

A circle with radius 1,2,3… has a square, which is a 4 right-isoscelese triangle. Choose one triangle, divided it by two and again choose one that is a right-isoscelese triangle. Then calculate the small right triangle. The two triangles (right-isoscelese triangle + right triangle) together form one isoscelese triangle, in which the base of isoscelese triangle defines a side of a polygon. The polygon sides are equal. In the next step you divide the isosceles triangle by two again. Calculate the next small right triangle. The two right triangles together form a isoscelese triangle yet again.

Observe! When a number is divided by 2 and its product again divided by 2 and so forth the product will never reach nil.

10/2= 5/2= 2,5/2 1,25/2= 0,625/2 = 0,3125/2= 0,15625/2…

Radius = 1

$S_1 = \sqrt{2}$

$S/2 = c, \quad c = 1/\sqrt{2} = 0.7071067812$

$H_1 = \sqrt{1^2 - c^2} = 1/\sqrt{2} = 0.7071067812$

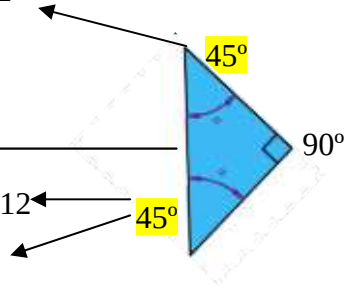
Area of square = 2

Square´s perimeter $= 4 * \sqrt{2} = \sqrt{32}$

Trangle 2rS has area $n_1 = 0.5$

Height$_1$ = Cosine of 45° = 0.7071067812

Sine of $45° == 1/\sqrt{2} = 0.7071067812$



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Compare the values with the sine and the number of height with the cosine, look att the pages of sine & cosine.

Triangle m (acs): a = opposite side of the small triangle m, s/2 = c, c = adjacent side,
s = small hypotenuse and polygon side, n = big area, m = small area of triangle m.
h = height, n = area, n_1 /2= n m+ n= n_2 O = perimeter

Cosine of $45° == 1/\sqrt{2}$
Cosine of 45° = 0.7071067812
Note: the isoscelese right triangle has changed to a right angle triangle. See the picture above!

Values in different forms:
It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.
Value of a polygon´s area $(height_1)^2 = 4n_1 / height^2 = 4$
Value of polygon´s perimeter $2(height_2) = 4s_1 / 2height_1 = 4$
Think of the polygon as a square, for further explanation see the book.
Note the area and primeter is not same and they don´t produce the same number for the squares för squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!
The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_1)* 4 = 5.656854249$
Area of polygon´s smallest diagonal: $(2* height_1)^2 = (2* 0.7071067812)^2 = 2$
Polygon (square)perimeter equal square perimeter= 5.656854249
Side of primeter is: $4s_1 / 4 = 1.414213562$

See the pages of sine - & cosine 45º

Look at cosine and sine 45º, there you can see the values given for triangles are dependence on sine and cosine.
But by redraw the Q-values for squares, every circle depend on its own square. *Q* presents a precentage of a inner circle that covers its own square. *4Q* define the relation between diameter and circumference. For further information read on the book.

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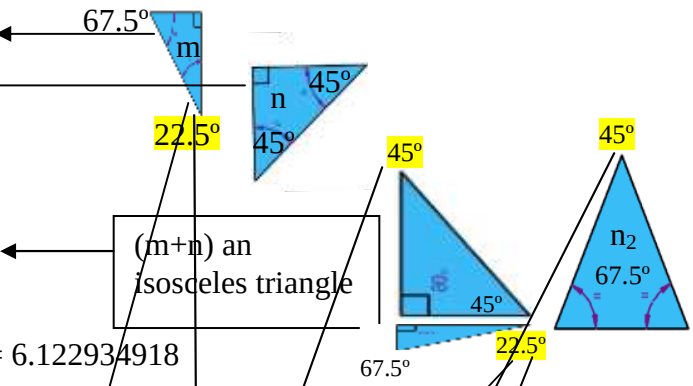
Step 2 Radius = 1 angle = 45°

$S_1 / 2$= c. $c = 1/\sqrt{2} = 0.7071067812$ adjacent side

H_1 = 0.7071067812

h = 1-H_1 = a. a = 0.2928932188 opposite side

$s_2 = \sqrt{0.2928932188^2 + 0.7071067812^2} = 0.7653668647$ Hypotenuse



Area: m = a* c / 2= 0.103553906

Area: n_1 / 2= n = 0.25

Area: (m+ n)= n_2 = 0.3535533906

Area : $n_2 * 8 = \sqrt{8} = 2.828427125$

Perimeter: s_2* 8= 0.7653668647* 8= 6.122934918

¼ primeter is: $2s_2 / 2$= 1.53073373

$Height_2 = 2n_2 / s_2$ = 0.9238795325

Polygon´s smallest distance between the opposite sides: $2height_2$ = 2* 0.9238795325= 1.847759065.

You need a value to calculate the polygon because its 2 * height is shorter than the circle diameter. Note that this is a polygon, not a circle.

See the pages for cosine 45º!

$Height_2 = 2n_2 / s_2$ = 0.9238795325

02. Cosine of 22.5° = 0.9238795325

See the pages for sine 45º!

Value of polygon area $= n_2 * 8 = \sqrt{8} = 2.828427125$

01. Sine of 45° = 0.7071067812* 4= 2.828427125

Value of perimeter 6.122934918 / 2 = 3.061467459

02. Sine of 22.5° = 0.3826834324* 8= 3.061467459

Values in different forms:

Q: $8s_2 / 2^3(height_2)$ = 0.8284271247

Q: $8n_2 /(2*1)^2$ = 0.7071067812

(s_2* h_2)* 4= 4(0.7653668647* 0.9238795325) = 2.828427125

4Q: $8s_2 / 2$= 3.061467459

4Q: $8n_2 / (height_2)^2$ = 3.313708499

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It is possible to think of a polygon´s perimeter as square's primeter, then one obtains the value below.

Value of polygon´s area $(height_2)^2 = 8n_2 / heiht^2 = 3.313708499$

Value of polygon´s perimeter $2(height_2)= 8s_2 / 2height_2= 3.313708499$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_2)* 4= 7.39103626$

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_2)* 4= 7.39103626$

Area of polygon´s smallest diagonal: $(2* height_2)^2 = (2* 0.9238795325)^2 = 3.414213562$

Polygon perimeter equal square perimeter= 6.122934918

Side of primeter is: $8s_2 / 4= 1.53073373$

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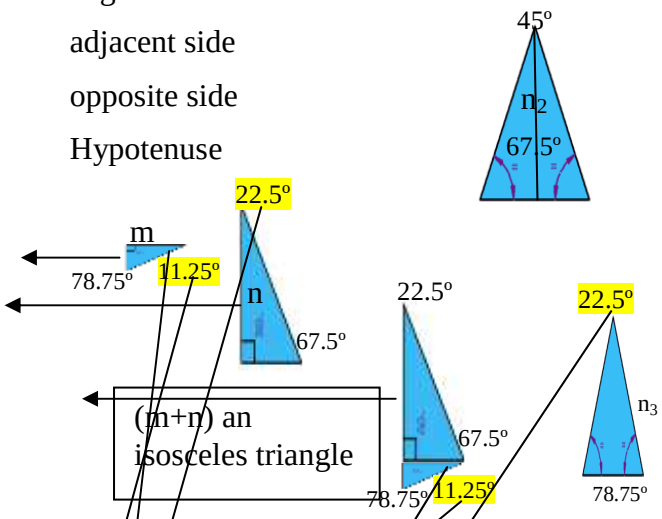
Step 3 Radius = 1 angle = 45°

$S_2 / 2 = c.$ $c = 0.3826834324$ adjacent side

$h = 1-h_2 = a.$ $a = 0.0761204675$ opposite side

$s_3 = \sqrt{a^2 + c^2} = 0.390180644$ Hypotenuse



Area: $m = a * c / 2 = 0.0145650204$

Area: $n_2 / 2 = n = 0.1767766953$

Area: $(m+ n) = n_3 = 0.1913417162$

Area $= n_3 * 16 = 3.061467459$

Perimeter: $s_3 * 16 = 6.2428903055$

¼ perimeter $= s_3 * 4 = 1.560722576$

$Height_3 = 2n_3 / s_3 = 0.9807852804$

Polygon´s smallest distance between the opposite sides: $2height_3 = 2 * 0.9807852804 = 1.961570561$.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 45º!

$Height_3 = 2n_3 / s_3 = 0.9807852804$

03. Cosine of 11.25° = 0.9807852804

See the pages for sine 45º!

Value of polygon´s area = 3.061467459

02. Sine of 22.5° * 8= 3.061467459

Value of polygon´s perimeter = 3.121445152

03. Sine of 11.25° * 16= 3.121445152

Values in different forms:

Q: $16s_3 / 2^3(height_3) = 0.7956494695$

Q: $16n_3 /(2*1)^2 = 0.7653668647$

$(s_3 * h_3) * 8 = 8(0.390180644 * 0.9807852804) = 3.061467459$

4Q: $16s_3 / 2 = 3.121445152$

4Q: $16n_3 / (height_3)^2 = 3.182597878$

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It is possible to think of a polygon´s perimeter as square's primeter, then one obtains the value below.

Value of polygon´s area $(height_3)^2 = 16n_3 / heiht^2 = 3.182597879$

Value of polygon´s perimeter $2(height_3)= 16s_3 / 2height_3 = 3.182597879$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_3)* 4= 7.846282243$

Area of polygon´s smallest diagonal: $(2* height_3)^2 = (2* 0.9807852804)^2 = 3.847759065$

Polygon perimeter equal square perimeter= 6.2428903055

Side of primeter is: $16s_3 / 4= 1.560722576$

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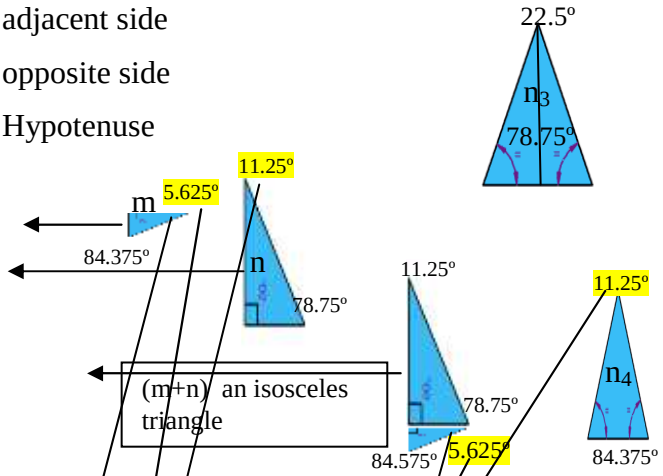
The polygon's perimeter has a gap between the first polygon's side and the last polygon's side.

Step 4 Radius = 1 angle = 45°

$s_3 / 2 = c.$ $c = 0.195090322$ adjacent side

$h = 1-h_3 = a.$ $a = 0.0192147196$ opposite side

$s_4 = \sqrt{a^2 + c^2} = 0.1960342807$ Hypotenuse



Area m = a * c / 2= 0.0018743029

Area: $n_3 / 2 = n = 0.0956708581$

Area: $(m+ n) = n_4 = 0.097545161$

Area = $n_4 * 32 = 3.121445152$

Perimeter = $s_4 * 32 = 6.273096981$

¼ perimeter = $s_4 * 8 = 1.568274245$

$Height_4 = 2n_4 / s_4 = 0.9951847267$

Polygon´s smallest distance between the opposite sides: $2height_4 = 2* 0.9951847267 = 1.990369453$.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 45º!

$Height_4 = 2n_4 / s_4 = 0.9951847267$

04. Cosine 5.625° = 0.9951847267

See the pages for sine 45º!

Value of polygon area = 3.121445152

03. Sine of 11.25° * 16= 3.121445152

Value of polygon´s perimeter = 3.136548491

04. Sine of 5.625° * 32= 3.136548491

The polygon's perimeter has a gap between the first polygon's side and the last polygon's side. Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon. As we continue down the steps the gap will get bigger and bigger.

Values in different forms:

Q: $32s_4 / 2^3(height_4) = 0.7879312269$

Q: $32n_4 /(2*1)^2 = 0.7803612881$

$(s_4* h_4)* 16= 16(0.1960342807* 0.9951847267) = 3.061467459$

4Q: $32s_4 / 2 = 3.136548491$

4Q: $32n_4 / (height_4)^2 = 3.1517249076548491$

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It is possible to think of a polygon´s perimeter as square's primeter, then one obtains the value below.

Value of polygon´s area $(height_4)^2 = 32n_4 / heiht^2 = 3.151724907$

Value of polygon´s perimeter $2(height_4)= 32s_4 / 2height_4 = 3.151724907$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known, if we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_4)* 4= 7.961477814$

Area of polygon´s smallest diagonal: $(2* height_4)^2 = (2* 0.9951847267)^2 = 3.961570561$

Polygon perimeter equal square perimeter= 6.273096981

Side of perimeter is: $32s_4 / 4= 1.568274245$

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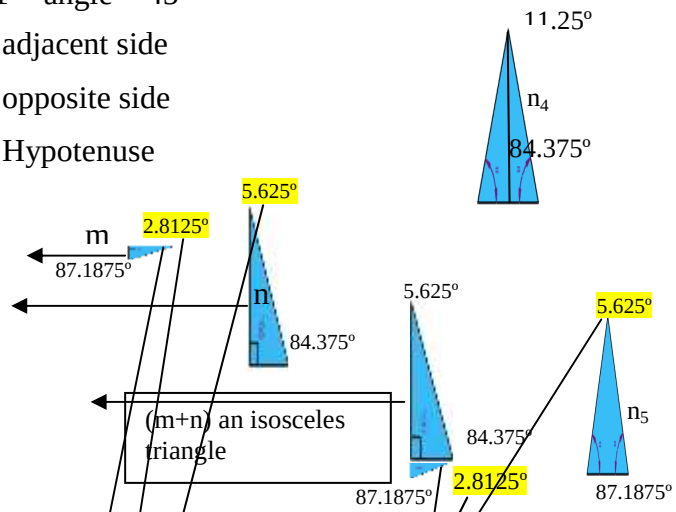
As we continue down the steps the gap will get bigger and bigger.

Step 5 Radius = 1 angle = 45°

$S_4 / 2 = c.$ $c = 0.0980171403$ adjacent side

$h = 1-h_4 = a.$ $a = 0.0048152733$ opposite side

$s_5 = \sqrt{a^2 + c^2} = 0.0981353487$ Hypotenuse



Area m = a * c / 2= 2.359896593 $_E^{-4}$

Area: $n_4 / 2 = n = 0.0487725805$

Area: $(m+ n) = n_5 = 0.0490085702$

Area = $n_5 * 64 = 3.136548491$

Perimeter = $s_5 * 64 = 6.280662314$

¼ perimeter = $s_4 * 16 = 1.570165579$

$Height_5 = 2n_5 / s_5 = 0.9987954562$

Polygon´s smallest distance between the opposite sides: $2height_5 = 2 * 0.9987954562 = 1.997590912$.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 45º!

$Height_5 = 2n_5 / s_5 = 0.9987954562$

05. Cosine of 2.8125° = 0.9987954562

See the pages for sine 45º!

Value of polygon´s area = 3.136548491

04. Sine of 5.625° * 32= 3.136548491

Value of polygon´s perimeter = 3.140331157

05. Sine of 2.8125° * 64= 3.140331157

The polygon's perimeter has a gap between the first polygon's side and the last polygon's side. Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $64s_5 / 2^3(height_5) = 0.7860295963$

Q: $64n_5 /(2*1)^2 = 0.7841371226$

$(s_5 * h_5) * 32 = 32(0.0981353487 * 0.9987954562) = 3.136548491$

4Q: $64s_5 / 2 = 3.140331157$

4Q: $64n_5 / (height_5)^2 = 3.144118385$

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It is possible to think of a polygon´s perimeter as square's primeter, then one obtains the value below.

Value of polygon´s area $(height_5)^2 = 64n_5$ / $heiht^2 = 3.144118385$

Value of polygon´s perimeter $2(height_5)= 64s_5$ / $2height_5 = 3.144118385$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_5)* 4= 7.99036365$

Area of polygon´s smallest diagonal: $(2* height_5)^2 = (2*0.9987954562)^2 = 3.990369453$

Polygon perimeter equal square perimeter= $s_5 * 64= 6.2280662314$

Side of primeter is: $64s_5 / 4= 1.570165579$

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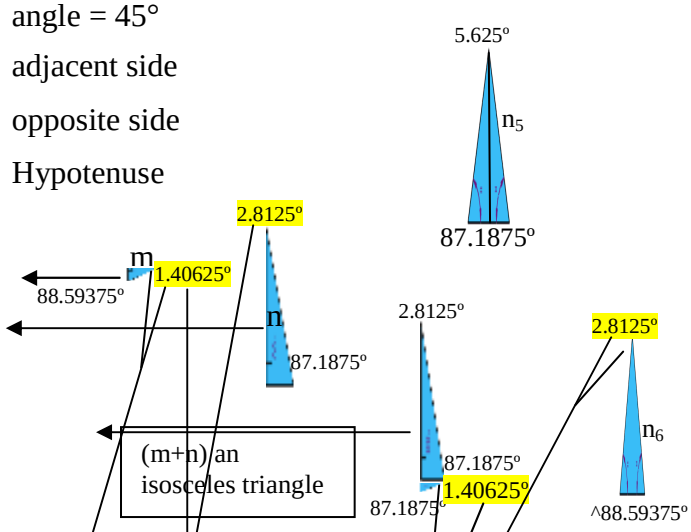
As we continue down the steps the gap will get bigger and bigger.

Step 6 Radius = 1 angle = 45°

$s_5 / 2 = c.$ $c = 0.0490676743$ adjacent side

$h = 1-h_5 = a.$ $a = 0.0012045438$ opposite side

$s_6 = \sqrt{a^2 + c^2} = 0.049082457$ Hypotenuse



Area: $m = a * c / 2 = 2.955208143\ E^{-5}$

Area: $n_5 / 2 = n = 0.0245042851$

Area: $(m+ n) = n_6 = 0.0245338372$

Area $= n_6 * 128 = 3.140331157$

Perimeter $= s_6 * 128 = 6.282554502$

¼ perimeter $= s_6 * 32 = 1.570638626$

$Height_6 = 2n_6 / s_6 = 0.9996988187$

Polygon´s smallest distance between the opposite sides: $2height_6 = 2* 0.9996988187 = 1.999397637$.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 45º!

$Height_6 = 2n_6 / s_6 = 0.9996988187$

06. Cosine 1.40625° = 0.9996988187

See the pages for sine 45º!

Value of polygon´s area = 3.140331157

05. Sine 2.8125° = 0.0490676743* 64= 3.140331157

Value of polygon´s perimeter = 3.141277251

06. Sine 1.40625° = 0.0245412285* 128= 3.141277251

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $128s_6 / 2^3(height_6) = 0.7855559075$

Q: $128n_6 /(2*1)^2 = 0.7850827892$

$(s_6* h_6)* 64= 64(0.049082457* 0.9996988187) = 3.140331157$

4Q: $128s_6 / 2= 3.141277251$

4Q: $128n_6 / (height_6)^2 = 3.14222363$

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It is possible to think of a polygon´s perimeter as square's primeter, then one obtains the value below.

Value of polygon´s area $(height_6)^2 = 128n_6 / heiht^2 = 3.14222363$

Value of polygon´s perimeter $2(height_6) = 128s_6 / 2height_6 = 3.14222363$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_6)* 4= 7.99759055$

Area of polygon´s smallest diagonal: $(2* height_6)^2 = (2* 0.9996988187)^2 = 3.997590912$

Polygon perimeter equal square perimeter= $s_6 * 128= 6.282554502$

Side of primeter is: $128s_6 / 4= 1.570638626$

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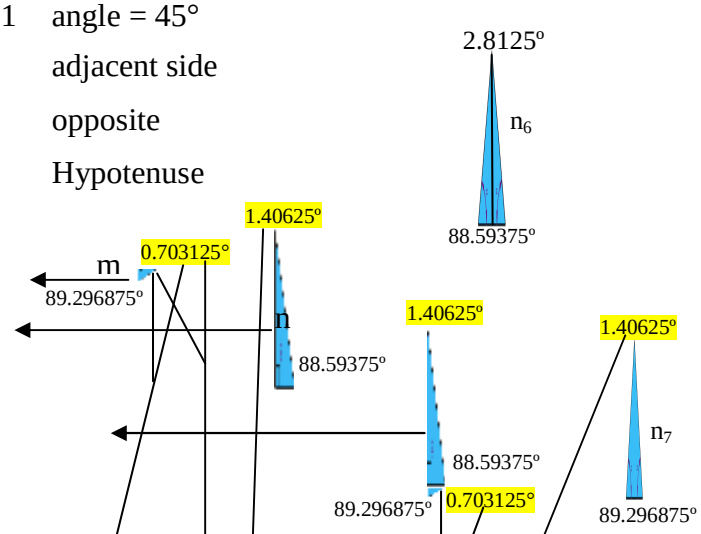
As we continue down the steps the gap will get bigger and bigger.

Step 7 Radius = 1 angle = 45°

$S_6 / 2 = c.$ $c = 0.0245412285$ adjacent side

$h = 1-h_6 = a.$ $a = 3.011813038\ E^{-4}$ opposite

$s_7 = \sqrt{a^2 + c^2} = 0.0245430766$ Hypotenuse



Area m = a* c / 2= 3.695679601 E^{-6}

Area: $n_6 / 2 = n = 0.0122669186$

Area: $(m+ n) = n_7 = 0.0122706143$

Area = $n_7 * 256 = 3.141277251$

Perimeter = $s_7 * 256 = 6.283027602$

¼ perimeter = $s_7 * 64 = 1.570756901$

$Height_7 = 2n_7 / s_7 = 0.9999247018$

Polygon´s smallest distance between the opposite sides: $2height_5 = 2* 0.9999247018 = 1.999849404$.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 45º!

$Height_7 = 2n_7 / s_7 = 0.9999247018$

07. Cosine of 0.703125° = 0.9999247018

See the pages for sine 45º!

Value of polygon´s area = 3.141277251

06. Sine of 1.40625° = 0.0245412285* 128= 3.141277251

Value of polygon´s perimeter = 3.141513801

07. Sine 0.703125° = 0.0122715383* 256 = 3.141513801

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $256s_7 / 2^3(height_7) = 0.7854375923$

Q: $256n_7 /(2*1)^2 = 0.7853193127$

$(s_7* h_7)* 128= 128(0.0245430766* 0.9999247018) = 3.141277251$

4Q: $256s_7 / 2= 3.141513801$

4Q: $256n_7 / (height_7)^2 = 3.141750369$

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It is possible to think of a polygon´s perimeter as square's primeter, then one obtains the value below.

Value of polygon´s area $(height_7)^2 = 256n_7/heiht^2 = 3.141750369$

Value of polygon´s perimeter $2(height_7)= 256s_7 /2height= 3.141750369$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_7)* 4= 7.999397614$

Area of polygon´s smallest diagonal: $(2* height_7)^2 = (2* 0.9999247018)^2 = 3.999397637$

Polygon perimeter equal square perimeter= $s_7 * 256= 6.283027602$

Side of primeter is: $256s_7 / 4= 1.570756901$

As we continue down the steps the gap will get bigger and bigger.

Step 8 Radius = 1 angle = 45°

$S_7 / 2= c.$ $c = 0.0122715383$ adjacent side

$h = 1-h_7 = a.$ $a = 7.52966822\ _E{}^{-5}$ opposite side

$s_8 = \sqrt{a^2 + c^2} = 0.0122717693$ Hypotenuse

Area $m = a * c / 2= 4.620030592\ _E{}^{-7}$

Area: $n_7 / 2= n = 0.0061353072$

Area: $(m+ n)= n_8 = 0.0061357691$

Area $= n_8 * 512= 3.141513801$

Perimeter $= s_8 * 512= 6.283145875…$

¼ perimeter $= s_8 * 128= 1.570786469$

$Height_8 = 2n_8 / s_8 = 0.9999811753$

Polygon´s smallest distance between the opposite sides: $2height_8 = 2* 0.999981175…=$ 1.99996235…

You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle.

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See the pages for cosine 45º!

$Height_8 = 2n_8 / s_8 = 0.9999811753$

08. Cosine 0.3515625° = 0.9999811753

See the pages for sine 45º!

Value of polygon´s area = 3.141513801

07. Sine 0.703125° = 0.0122715383* 256= 3.141513801

Value of polygon´s perimeter = 3.141572938

08. Sine 0.3515625° = 0.0061358846* 512= 3.141572938

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $512s_8 / 2^3(height_8) = 0.7854080202$

Q: $512n_8 /(2*1)^2 = 0.7853784503$

$(s_8* h_8)* 256= 256(0.0122717693* 0.9999811753) = 3.141513801$

4Q: $512s_8 / 2= 3.14157294$

4Q: $512n_8 / (height_8)^2 = 3.141632081$

It is possible to think of a polygon´s perimeter as square's primeter, then one obtains the value below.

Value of polygon´s area $(height_8)^2 = 512n_8/heiht^2 = 3.141632081$

Value of polygon´s perimeter $2(height_8)= 512s_8 / 2height= 3.141632081$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_8)* 4= 7.999849402$

Area of polygon´s smallest diagonal: $(2height_8)^2 = (2* 0.9999811753)^2 = 3.999849404$

Polygon perimeter equal square perimeter= $s_8 * 512= 6.283145876$

Side of primeter is: $512s_8 / 4= 1.570786469$

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As we continue down the steps the gap will get bigger and bigger.

Step 9 Radius = 1 angle = 45°

$S_8 / 2 = c.$ $c = 0.0061358846$ adjacent side

$h = 1-h_8 = a.$ $a = 1.88247174_{E}^{-5}$ opposite side

$s_9 = \sqrt{a^2 + c^2} = 0.0061359135$ Hypotenuse

Area $m = a^* c / 2 = 5.775314726_{E}^{-8}$

Area: $n_8 / 2 = n = 0.0030678846$

Area: $(m+ n) = n_9 = 0.0030679423$

Area $= n_9 * 1024 = 3.141572938$

Perimeter $= s_9 * 1024 = 6.283175444$

¼ perimeter $= s_9 * 256 = 1.570793861$

$Height_9 = 2n/s_9 = 0.9999952938$

Polygon´s smallest distance between the opposite sides: $2height_9 = 2* 0.9999952938 = 1.999990588$.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 45º!

$Height_9 = 2n_9 / s_9 = 0.9999952938$

09. Cosine 0.17578125° = 0.9999952938

See the pages for sine 45º!

Value of polygon´s area = 3.141572938

08. Sine of 0.3515625° = 0.0061358846* 512= 3.14157294

Value of polygon´s perimeter = 3.141587722

09. Sine of 0.17578125° = 0.0030679568* 1024= 3.141587725

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $1024s_9 / 2^3(height_9) = 0.7854006276$

Q: $1024n_9 /(2*1)^2 = 0.7853932351$

$(s_9* h_9)* 512 = 512(0.0061359135* 0.9999952938) = 3.14157294$

4Q: $1024s_9 / 2 = 3.141587725$

4Q: $1024n_9 / (height_9)^2 = 3.14160251$

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It is possible to think of a polygon´s perimeter as square's primeter, then one obtains the value below.

Value of polygon´s area $(height_9)^2 = 1024n/heiht^2 = 3.14160251$

Value of polygon´s perimeter $2(height_9) = 1024s_9 / 2height_9 = 3.14160251$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_9)* 4 = 7.99996235$

Area of polygon´s smallest diagonal: $(2* height_9)^2 = (2* 0.9999952938)^2 = 3.99996235$

Polygon perimeter equal square perimeter= $s_5 * 64 = 6.283175444$

Side of primeter is: $1024s_9 / 4 = 1.570793861$

As we continue down the steps the gap will get bigger and bigger.

Step 10	Radius = 1	angle = 45°
$S_9 / 2 = c.$	$c = 0.0030679568$	adjacent side
$h = 1-h_9 = a.$	$a = 4.70619036_{E}^{-6}$	opposite side
$s_{10} = \sqrt{a^2 + c^2}$	$= 0.0030679604$	Hypotenuse

Area $m = a * c / 2 = 7.219194271_{E}^{-9}$

Area: $n_9 / 2 = n = 0.0015339712$

Area: $(m+ n) = n_{10} = 0.0015339784$

Area $= n_{10} * 2048 = 3.141587722$

Perimeter $= s_{10} * 2048 = 6.283182835$

¼ perimeter $= s_{10}* 512 = 1.570795709$

$Height_{10} = 2n_{10} / s_{10} = 0.9999988235$

Polygon´s smallest distance between the opposite sides: $2height_{10} = 2* 0.9999988236 = 1.999997647$.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle.

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See the pages for cosine 45º!

$Height_{10} = 2n_{10} / s_{10} = 0.9999988235$

10. Cosine 0.087890625° = 0.9999988235

See the pages for sine 45º!

Value of polygon´s area = 3.14158772…

09. Sine 0.17578125° = 0.0030679568* 1024= 3.14158772…

Value of polygon´s perimeter = 3.14159142…

10. Sine 0.087890625° = 0.0015339802* 2048= 3.14159142…

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $2048s_9 / 2^3(height_{10}) = 0.7853987794$

Q: $2048n_{10} /(2*1)^2 = 0.7853969313$

$(s_{10}* h_{10})* 1024= 1024(0.0030679604* 0.9999988235) = 3.141587725$

4Q: $2048s_{10} / 2= 3.141591422$

4Q: $2048n_{10} / (height_{10})^2 = 3.141595118$

It is possible to think of a polygon´s perimeter as square's primeter, then one obtains the value below.

Value of polygon´s area $(height_{10})^2 = 2048n_{10} / heiht^2 = 3.141595118$

Value of polygon´s perimeter $2(height_{10})= 2048s_{10} / 2height= 3.141595118$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_{10})* 4= 7.999990588$

Area of polygon´s smallest diagonal: $(2* height_{10})^2 = (2* 0.9999988235)^2 = 3.999990588$

Polygon perimeter equal square perimeter= 6.283182835

Side of primeter is: $2048s_{10} / 4= 1.570795709$

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As we continue down the steps the gap will get bigger and bigger.

Step 11 Radius = 1 angle = 45°

$S_{10} / 2 = c.$ c = 0, 0015339802 adjacent side

$h = 1-h_{10} = a.$ $a = 1.17654828\,_{E}{}^{-6}$ opposite side

$s_{11} = \sqrt{a^2 + c^2} = 0.0015339806$ Hypotenuse

Area $m = a^* c / 2 = 9.02400875\,_{E}{}^{-10}$

Area: $n_{10} / 2 = n = 7.669891907\,_{E}{}^{-4}$

Area: $(m+ n) = n_{11} = 7.669964099\,_{E}{}^{-4}$

Area $= n_{11}^* 4096 = 3.141591422$

Perimeter $= s_{11}^* 4096 = 6.283184691$

¼ perimeter $= s_{11}^* 1024 = 1.570796173$

$Height_{11} = 2n_{11} / s_{11} = 0.9999997059$

Polygon´s smallest distance between the opposite sides: $2height_{11} = 2^* 0.9999997059 =$ 1.999999412.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 45º!

$Height_2 = 2n_{11} / s_{11} = 0.9999997059$

11. Cosine 0.0439453125° = 0.9999997059

See the pages for sine 45º!

Value of polygon´s area = 3.141591422

10. Sine 0.087890625° = 0.0015339802* 2048= 3.141591422

Value of polygon´s perimeter = 3.141592346

11. Sine 0.0439453125° = 0.0007669903187* 4096= 3.141592346

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $4096s_{11} / 2^3(height_{11}) = 0.7853983174$

Q: $4096n_{11} /(2^*1)^2 = 0.7853978554$

$(s_{11}^* h_{11})^* 2048 = 2048(0.0015339806^* 0.9999997059) = 3.141591422$

4Q: $4096s_{11} / 2 = 3.141592346$

4Q: $4096n_{11} / (height_{11})^2 = 3.14159327$

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It is possible to think of a polygon´s perimeter as square's primeter, then one obtains the value below.

Value of polygon´s area $(height_{11})^2 = 4096n_{11}/heiht^2 = 3.14159327$

Value of polygon´s perimeter $2(height_{11}) = 4096s_{11}/2height = 3.14159327$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_{11})* 4 = 7.999997647$

Area of polygon´s smallest diagonal: $(2* height_{11})^2 = (2* 0.9999997059)^2 = 3.999997647$

Polygon perimeter equal square perimeter= 6.283184691

Side of primeter is: $4096s_{11} / 4 = 1.570796173$

As we continue down the steps the gap will get bigger and bigger.

Step 12	Radius = 1	angle = 45°
$S_{11} / 2 = c.$	$c = 7.669903187_{E}^{-4}$	adjacent side
$h = 1-h_{11} = a.$	$a = 2.9413715_{E}^{-7}$	opposite side
$s_{12} = \sqrt{a^2 + c^2}$	$= 7.669903751_{E}^{-4}$	Hypotenuse

Area $m = a* c / 2 = 1.12800173_{E}^{-10}$

Area: $n_{11} / 2 = n = 3.834950466_{E}^{-4}$

Area: $(m+ n) = n_{12} = 3.834951594_{E}^{-4}$

Area $= n_{12}* 8192 = 3.141592346$

Perimeter $= s_{12}* 8192 = 6.283185153$

¼ perimeter $= s_{12}* 2048 = 1.570796173$

$Height_{12} = 2n_{12}/s_{12} = 0.9999999265$

Polygon´s smallest distance between the opposite sides: $2height_{12} = 2* 0.9999999265 = 1.999999853$.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle.

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See the pages for cosine 45º!

$Height_{12} = 2n_{12}/s_{12} = 0.9999999265$

12. Cosine 0.0219726563° = 0.9999999265

One can see that as the number of the triangles increases the gap becomes bigger.
What is the angle when pi has million or billion decimals?

How are positioned the bases of triangles beside each other?

See the pages for sine 45º!

Value of polygon´s area = 3.141592346

11. Sine 0.0439453125° = 0.0007669903187* 4096= 3.141592346

Value of polygon´s perimeter = 3.141592577

12. Sine 0.0219726563° = 0.0003834951876 * 8192= 3.141592577

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $8192s_{12} / 2^3(height_{12}) = 0.7853982019$

Q: $8192n_{12} /(2*1)^2 = 0.7853980864$

$(s_{12}* h_{12})* 4096= 4096(7.669903751_E{}^{-4}* 0.9999999265) = 3.141592346$

4Q: $8192s_{12} / 2= 3.141592577$

4Q: $8192n_{12} / (height_{12})^2 = 3.141592808$

It is possible to think of a polygon´s perimeter as square's primeter, then one obtains the value below.

Value of polygon´s area $(height_{12})^2 = 8192n_{12} / heiht^2 = 3.141592808$

Value of polygon´s perimeter $2(height_{12})= 8192s_{12} / 2height= 3.141592808$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_{12})* 4= 7.999999412$

Area of polygon´s smallest diagonal: $(2* height_{12})^2 = (2* 0.9999999265)^2 = 3.999999412$

Polygon perimeter equal square perimeter= $s_{12} * 8192= 6.283185153$

Side of primeter is: $8192s_{12} / 4= 1.570796173$

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As we continue down the steps the gap will get bigger and bigger.

Step 13 Radius = 1 angle = 45°

$S_{12} / 2 = c.$ $c = 3.834951876\,_{E}{}^{-4}$ adjacent side

$h = 1-h_{12} = a.$ $a = 7.353431\,_{E}{}^{-8}$ opposite side

$s_{13} = \sqrt{a^2 + c^2} = 3.834951946\,_{E}{}^{-4}$ Hypotenuse

Area $m = a * c / 2 = 1.4100027\,_{E}{}^{-11}$

Area: $n_{12} / 2 = n = 1.917475797\,_{E}{}^{-4}$

Area: $(m+ n) = n_{13} = 1.917475938\,_{E}{}^{-4}$

Area $= n_{13} * 16384 = 3.141592577$

Sine of $0.0219726563° * 8192 = 3.141592577$

Perimeter $= s_{13} * 16384 = 6.283185269$

¼ perimeter $= s_{13} * 4048 = 1.570796288$

$Height_{13} = 2n_{13}/s_{13} = 0.9999999816$

Polygon´s smallest distance between the opposite sides: $2height_{13} = 2* 0.9999999816 = 1.999999963$.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 45º!

$Height_2 = 2n_{13} / s_{13} = 0.9999999816$

13. Cosine of 0.0109863281° = 0.9999999816

One can see that as the number of the triangles increases the gap becomes bigger.
What is the angle when pi has million or billion decimals?

How are positioned the bases of triangles beside each other?

See the pages for sine 45º!

Value of polygon´s area = 3.14159257

12. Sine 0.0219726563° = 0.0003834951876* 8192= 3.141592577

Value of polygon´s perimeter = 3.141592634

13. Sine 0.0109863281° = 0.0001917475973* 16384= 3.141592653

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $16384s_{13} / 2^3(height_{13}) = 0.785398173$

Q: $16384n_{13} /(2*1)^2 = 0.7853981441$

$(s_{13}* h_{13})* 8192 = 8192(3.834951946\,_{E}{}^{-4} * 0.9999999816) = 3.14157294$

4Q: $16384s_{13} / 2 = 3.141592634$

4Q: $16384n_{13} / (height_{13})^2 = 3.141592692$

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It is possible to think of a polygon´s perimeter as square's primeter, then one obtains the value below.

Value of polygon´s area $(height_{13})^2 = 16384n_{13} / heiht^2 = 3.141592692$

Value of polygon´s perimeter $2(height_{13}) = 16384s_{13} / 2height = 3.141592692$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_{13})* 4 = 7.999999853$

Area of polygon´s smallest diagonal: $(2* height_{13})^2 = (2* 0.9999999816)^2 = 3.999999853$

Polygon perimeter equal square perimeter= $s_{13} * 16384 = 6.283185153$

Side of primeter is: $16384s_{13} / 4 = 1.570796288$

Chapter three

Note in Archimedes theory that the sides had not halved, they are different.

See "Counter argument against Archimedes theory"

Step four; the polygon's perimeter has a gap between the first polygon's side and the last polygon's side. Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon. As we continue down the steps the gap will get bigger and bigger.

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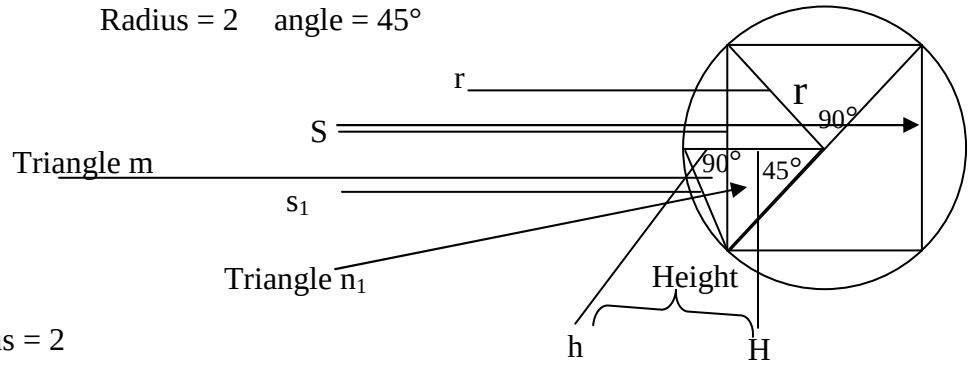
Chapter three

Step 1



Radius = 2

$S_1 = \sqrt{8}$

Square´s area = 8

$\text{Square´s perimeter} = 4 * \sqrt{8} = 11.3137085$

Triangle 2rS (rrs)area n_1 = 2

$H = \sqrt{2} = 1.414213562$

Triangle m (acs): a = opposite side of the small triangle m, s / 2= c, c = adjacent side, s = small hypotenuse and polygon side, n = big area, m = small area of triangle m. h = height, n = area, n_1 / 2= n m+ n= n_2 O = perimeter

Values in different forms:

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of (square) polygon´s area $(\text{height}_2)^2 = 4n_1 / \text{heiht}^2 = 4$

Value of (square) polygon´s perimeter $2(\text{height}_1) = 4s_1 / 2\text{height}_1 = 4$

Think of the polygon as a square, for further explanation see the book.

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2 * \text{height}_1) * 4 = (2 * 1.414213562) * 4 = 11.3137085$

Area of polygon´s smallest diagonal: $(2 * \text{height}_1)^2 = (2 * 1.414213562)^2 = 8$

See the pages of sine - & cosine 45º

Look at cosine and sine 45º, there you can see the values given for triangles are dependence on sine and cosine.

But by redraw the Q-values for squares, every circle depend on its own square. *Q* presents a precentage of a inner circle that covers its own square. *4Q* define the relation between diameter and circumference. For further information read on the book.

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Step 2 Radius = 2 angle = 45°

$S_1 / 2 = c.$ $c = \sqrt{2} = 1.414213562$ adjacent side

$H_1 = 1.414213562$

$h = 2 - H_1 = a.$ $a = 0.5857864376$ opposite side

$s_2 = \sqrt{a^2 + c^2} = 1.530733729$ Hypotenuse

Area: $m = a * c / 2 = 0.4142135624$

Area: $n_1 / 2 = n = 1$

Area : $(m + n) = n_2 = \sqrt{2} = 1.414213562$

Area: $n_2 * 8 = 11.3137085$

Perimeter: $s_2 * 8 = 12.24586984$

¼ perimeter = $s_2 * 2 = 3.061467459$

$height_2 = 2n_2 / s_2 = 1.847759065$

Polygon´s smallest distance between the opposite sides: $2height_2 = 2* 1.847759065 = 3.69551813$.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 45º!

$Height_2 = 2n_2 / s_2 = 1.847759065$

02. Cosine 22.5° * 2= 1.847759065

See the pages for sine 45º!

Value of polygon´s area = 3.313708499

01. Sine 45° = 0.7071067812* 4= 3.313708499

Value of polygon´s perimeter = 3.061467459

02. Sine 22.5° = 0.3826834324* 8= 3.061467459

Values in different forms:

Q: $8s_2 / 2^3(height_2) = 0.8284271247$

Q: $8n_2 /(2*2)^2 = 0.7071067812$

$(s_2* h_2) = (1.530733729* 1.847759065) = 2.828427125$

4Q: $8s_2 / 4 = 3.061467459$

4Q: $8n_2 / (height_2)^2 = 3.313708499$

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It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_2)^2 = 8n_2 / heiht^2 = 3.313708499$

Value of polygon´s perimeter $2(height_2)= 8s_2 / 2height_2 = 3.313708499$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_2)* 4=$ (2* 1.847759065)* 4= 14.78207252

Area of polygon´s smallest diagonal: $(2height_2)^2 = (2* 1.847759065)^2 = 13.65685425$

Polygon perimeter equal square perimeter= s_2 * 8= 12.24586984

Side of primeter is: $8s_2 / 4= 3.061467459$

Step 3 Radius = 2 angle = 45°

$S_2 / 2= c.$ c = 0.7653668647 adjacent side

$h = 2-h_2 = a.$ a = 0.152240935 opposite side

$s_3 = \sqrt{a^2 + c^2} = 0.7803612881$ Hypotenuse

Area: m = a* c/ 2 = 0.0582600835

Area: $n_2 / 2= n = 1/\sqrt{2} = 0.7071067812$

Area: (m+ n) = n_3 = 0.7653668647

Area = n_3* 16= 12.24586984

Perimeter = s_3 * 16= 12.48578061

¼ perimeter = s_3 * 2= 3.121445152

$Height_3 = 2n_3 /s_3 = 1.961570561$

Polygon´s smallest distance between the opposite sides: $2height_3 = 2* 1.961570561=$ 3.923141122.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle.

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See the pages for cosine 45º!

Height$_3$ = 2n$_3$ / s$_3$ = 1.961570561

03. Cosine 11.25° = 0.9807852804* 2= 1.961570561

See the pages for sine 45º!

Value of polygon´s area = 3.06146746

02. Sine 22.5° = 0.3826834324* 8= 3.061467459

Value of polygon´s perimeter = 3.121445152

03. Sine 11.25° = 0.195090322* 16= 3.121445152

Values in different forms:

Q: 16s$_3$ / 2^3(height$_3$) = 0.7956494695

Q: 16n$_3$ /(2*2)^2 = 0.7653668647

(s$_3$* h$_3$)2 = 2(0.7803612881* 1.961570561) = 3.061467459

4Q: 16s$_3$ / 4= 3.121445152

4Q: 16n$_3$ / (height$_3$)^2 = 3.182597879

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area (height$_3$)^2 = 16n$_3$ / heiht^2 = 3.182597879

Value of polygon´s perimeter 2(height$_3$)= 16s$_3$ / 2height$_3$ = 3.182597879

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: (2* height$_3$)* 4= (2* 1.961570561)* 4= 15.69256449

Area of polygon´s smallest diagonal: (2height$_3$)^2 = (2*1.961570561)^2 = 15.39103626

Polygon perimeter equal square perimeter= s$_3$ * 16 = 12.48578061

Side of primeter is: 16s$_3$ / 4= 3.121445152

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Step 4 Radius = 2 angle = 45°

The polygon's perimeter has a gap between the first polygon's side and the last polygon's side.

$S_3 / 2 = c.$ $c = 0.390180644$ adjacent side

$h = 2-h_3 = a.$ $a = 0.0384294392$ opposite side

$s_4 = \sqrt{a^2 + c^2} = 0.3920685613$ Hypotenuse

Area: $m = a * c / 2 = 0.0582600835$

Area: $n_3 / 2 = n = 0.3826834324$

Area: $(m+ n) = n_4 = 0.390180644$

Area $= n_4 * 32 = 12.48578061$

Perimeter $= s_4 * 32 = 12.54619396$

¼ perimeter $= s_4 * 8 = 3.136548491$

$Height_4 = 2n_4 / s_4 = 1.990369453$

Polygon´s smallest distance between the opposite sides: $2height_4 = 2* 1.990369453 =$ 3.980738906.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 45º!

$Height_4 = 2n_4 / s_4 = 1.990369453$

04. (Cosine 5.625°) = 0.9951847267* 2= 1.990369453

See the pages for sine 45º!

Value of polygon´s area = 3.121445152

03. Sine 11.25° = 0.195090322* 16= 3.121445152

Value of polygon´s perimeter = 3.136548491

04. Sine 5.625° = 0.0980171403* 32= 3.136548491

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon. As we continue down the steps the gap will get bigger and bigger.

Values in different forms:

Q: $32s_4 / 2^3(height_4) = 0.7879312269$

Q: $32n_4 /(2*2)^2 = 0.7803612881$

$(s_4* h_4)4 = 4(0.3920685613* 1.990369453) = 3.121445152$

4Q: $32s_4 / 4 = 3.136548491$

4Q: $32n_4 / (height_4)^2 = 3.151724907$

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It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_4)^2 = 32n_4 / heiht^2 = 3.151724907$

Value of polygon´s perimeter $2(height_4) = 32s_4 / 2height_4 = 3.151724907$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_4)* 4= (2* 1.990369453)* 4= 15.92295562$

Area of polygon´s smallest diagonal: $(2height_4)^2 = (2* 1.990369453)^2 = 15.84628224$

Polygon perimeter equal square perimeter= $s_4 * 32= 12.54619396$

Side of primeter is: $32s_4 / 4= 3.136548491$

As we continue down the steps the gap will get bigger and bigger.
One can see that as the number of the triangles increases the gap becomes bigger.

Step 5 Radius = 2 angle = 45°

$s_4 / 2= c.$ $c = 0.1960342807$ adjacent side

$h = 2 – h_4 = a.$ $a = 0.0096305467$ opposite side

$s_5 = \sqrt{a^2 + c^2} = 0.1962706973$ Hypotenuse

Area: $m = a * c / 2 = 9.43958643_{E}^{-4}$

Area: $n_4 / 2= n = 0.195090322$

Area: $(m+ n) = n_5 = 0.1960342807$

Area = $n_5 * 64= 12.54619396$

Perimeter = $s_5 * 64= 12.56132463$

¼ perimeter = $s_5 * 16=3.140331158$

$height_5 = 2n_5 / s_5 = 1.997590912$

Polygon´s smallest distance between the opposite sides: $2height_5 = 2* 1.997590912= 3.995181824.$

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

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See the pages for cosine 45º!

$Height_5 = 2n_5 / s_5 = 1.997590912$

5. Cosine 2.8125° = 0.9987954562* 2= 1.997590912

See the pages for sine 45º!

Value of polygon´s area = 3.136548491

04. Sine 5.625° = 0.0980171403* 32= 3.136548491

Value of polygon´s perimeter = 3.140331157

05. Sine 2.8125° = 0.0490676743* 64= 3.140331157

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $64s_5 / 2^3(height_5) = 0.7860295963$

Q: $64n_5 /(2*2)^2 = 0.7841371226$

$(s_5* h_5)8 = 8(0.1962706973* 1.997590912) = 3.136548491$

4Q: $64_5 / 4= 3.140331157$

4Q: $64n_5 / (height_5)^2 = 3.144118385$

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_5)^2 = 64n_5 / heiht^2 = 3.144118385$

Value of polygon´s perimeter $2(height_5)= 64n_5 / 2height_5 = 3.144118385$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_5)* 4= (2* 1.997590912)* 4= 15.9807273$

Area of polygon´s smallest diagonal: $(2height_5)^2 = (2* 1.997590912)^2 = 15.96147781$

Polygon perimeter equal square perimeter= $s_5 * 64= 12.56132463$

Side of primeter is: $64s_5 / 4= 3.140331158$

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As we continue down the steps the gap will get bigger and bigger.

Step 6 Radius = 2 angle 45°

$s_5 / 2 = c.$ $c = 0.0981353487$ adjacent side

$h = 2-h_5 = a.$ $a = 0.0024090876$ opposite side

$s_6 = \sqrt{a^2 + c^2} = 0.0981649141$ Hypotenuse

Area: $m = a * c / 2 = 1.182083253\ _E{}^{-4}$

Area: $n_5 / 2 = n = 0.0980171403$

Area: $(m+ n) = n_6 = 0.0981353487$

Area = $n_6 * 128 = 12.56132463$

Perimeter = $s_6 * 128 = 12.565109$

¼ perimeter = $s_6 * 32 = 3.141277251$

$Height_6 = 2n_6 / s_6 = 1.999397637$

Polygon´s smallest distance between the opposite sides: $2height_6 = 2* 1.999397637 = 3.998795274$.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 45º!

$Height_6 = 2n_6 / s_6 = 1.999397637$

06. Cosine 1.40625° = 0.9996988187* 2= 1.999397637

See the pages for sine 45º!

Value of polygon´s area = 3.140331157

05. Sine 2.8125° = 0.0490676743* 64= 3.140331157

Value of polygon´s perimeter = 3.141277251

06. Sine 1.40625° = 0.0245412285* 128= 3.141277251

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $128s_6 / 2^3(height_6) = 0.7855559075$

Q: $128n_6 /(2*2)^2 = 0.7850827892$

$(s_6* h_6)16 = 16(0.0981649141* 1.999397637) = 3.140331157$

4Q: $128s_6 / 4 = 3.141277251$

4Q: $128n_6 / (height_6)^2 = 3.142223632$

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It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_6)^2 = 128n_6 / heiht^2 = 3.142223632$

Value of polygon´s perimeter $2(height_6)= 128s_6 / 2height_6 = 3.142223632$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_6)* 4= (2* 1.999397637)* 4= 15.9951811$

Area of polygon´s smallest diagonal: $(2height_6)^2 = (2* 1.999397637)^2 = 15.99036364$

Polygon perimeter equal square perimeter= $s_6 * 128= 12.565109$

Side of primeter is: $128s_6 / 4= 3.141277251$

As we continue down the steps the gap will get bigger and bigger.

Step 7 Radius = 2 angle = 45°

$s_6 / 2= c.$ $c = 0.049082457$ adjacent side

$h = 2-h_6= a.$ $a = 6.023626075\ _E{}^{-4}$ opposite side

$s_7 = \sqrt{a^2 + c^2} = 0.0490861531$ Hypotenuse

Area: $m = a * c / 2= 1.47827184\ _E{}^{-5}$

Area: $n_6 / 2= n = 0.0490676743$

Area: $(m+ n) = n_7 = 0.049082457$

Area = $n_7* 256= 12.565109$

Perimeter = $s_7 * 256= 12.5660552$

¼ perimeter = $s_7* 64= 3.1415138$

$Height_7 = 2n_7 / s_7 = 1.999849404$

Polygon´s smallest distance between the opposite sides: $2height_7 = 2* 1.999849404=$ 3.999698808.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle.

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See the pages for cosine 45º!

Height$_7$ = 2n$_7$ / s$_7$ = 1.999849404

07. Cosine 0.703125° = 0.9999247018* 2= 1.999849404

See the pages for sine 45º!

Value of polygon´s area = 3.141277251

06. Sine 1.40625° = 0.0245412285* 128= 3.141277251

Value of polygon´s perimeter = 3.141513801

07. Sine 0.703125° = 0.0122715383* 256= 3.141513801

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: 256s$_7$ / 2^3(height$_7$) = 0.7854375923

Q: 256n$_7$ /(2*2)^2 = 0.7853193127

(s$_7$* h$_7$)32 = 32(0.0490861531* 1.999849404) = 3.141277251

4Q: 128s$_7$ / 4= 3.141513801

4Q: 128n$_7$ / (height$_7$)^2 = 3.141750367

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area (height$_7$)^2 = 256n$_7$ / heiht^2 = 3.141750367

Value of polygon´s perimeter 2(height$_7$)= 256s$_7$ / 2height$_7$ = 3.141750367

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: (2* height$_7$)* 4= (2* 1.999849404)* 4= 15.99879523

Area of polygon´s smallest diagonal: (2height$_7$)^2 = (2* 1.999849404)^2 = 15.99759055

Polygon perimeter equal square perimeter= s$_7$ * 256= 12.5660552

Side of primeter is: 256s$_7$ / 4= 3.1415138

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As we continue down the steps the gap will get bigger and bigger.

Step 8 Radius = 2 angle = 45°

$s_7 / 2 = c.$ $c = 0.0245430766$ adjacent side

$h = 2-h_7 = a.$ $a = 1.505963218\ _E{}^{-4}$ opposite side

$s_8 = \sqrt{a^2 + c^2} = 0.0245435386$ Hypotenuse

Area: $m = a * c / 2 = 1.848048529\ _E{}^{-6}$

Area: $n_7 / 2 = n = 0.0245412285$

Area: $(m+ n) = n_8 = 0.0245430766$

Area $= n_8 * 512 = 12.5660552$

Perimeter $= s_8 * 512 = 12.56629176$

¼ perimeter $= s_8 * 128 = 3.14157294$

$Height_8 = 2n_8 / s_8 = 1.999962351$

Polygon´s smallest distance between the opposite sides: $2height_8 = 2* 1.999962351 =$ 3.999924702.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 45º!

$Height_8 = 2n_8 / s_8 = 1.999962351$

08. Cosine 0.3515625° = 0.9999811753* 2= 1.999962351

See the pages for sine 45º!

Value of polygon´s area = 3.141513801

07. Sine 0.703125° = 0.0122715383* 256= 3.141513801

Value of polygon´s perimeter = 3.14157294

08. Sine 0.3515625° = 0.0061358846* 512= 3.14157294

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $512s_8 / 2^3(height_8) = 0.7854080202$

Q: $512n_6 /(2*2)^2 = 0.7853784503$

$(s_8* h_8)64 = 64(0.0245435386* 1.999962351) = 3.141513801$

4Q: $512s_8 / 4 = 3.1412772513.14157294$

4Q: $512n_8 / (height_8)^2 = 3.141632081$

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It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_8)^2 = 512n_8$ / $heiht^2 = 3.141632081$

Value of polygon´s perimeter $2(height_8) = 512s_8$ / $2height_8 = 3.141632081$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_8)* 4=$ (2* 1.999962351)* 4= 15.99969881

Area of polygon´s smallest diagonal: $(2height_8)^2$ = (2* 1.999962351)^2 = 15.99939762

Polygon perimeter equal square perimeter= s_8 * 512= 12.56629176

Side of primeter is: $512s_8$ / 4= 3.14157294

As we continue down the steps the gap will get bigger and bigger.

Step 9 Radius = 2 angle = 45°

s_8 / 2= c. c = 0.0122717693 adjacent side

h = 2 - h_8 = a. a = 3.76494348 $_E{}^{-5}$ opposite side

$s_9 = \sqrt{a^2 + c^2} = 0.0122718271$ Hypotenuse

Area: m = a * c / 2= 2.31012589 $_E{}^{-7}$

Area: n_8 / 2= n = 0.0122715383

Area: (m+ n) = n_9 = 0.0122717693

Area = n_9 * 1024= 12.56629176

Perimeter = s_9 * 1024= 12.5663509

¼ perimeter = s_9 * 256=3.141587738

$Height_9 = 2n_9 / s_9$ = 1.999990588

Polygon´s smallest distance between the opposite sides: $2height_9$ = 2* 1.999990588= 3.999981176.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle.

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See the pages for cosine 45º!

$Height_9 = 2n_9 / s_9 = 1.999990588$

09. Cosine 0.17578125° = 0.9999952938* 2= 1.999990588

See the pages for sine 45º!

Value of polygon´s area = 3.14157294

08. Sine 0.3515625° = 0.0061358846* 512= 3.14157294

Value of polygon´s perimeter = 3.141587725

09. Sine 0.17578125° = 0.0030679568* 1024= 3.141587725

Values in different forms:

Q: $1024s_9 / 2^3(height_9) = 0.7854006276$

Q: $1024n_9 /(2*2)^2 = 0.7853932351$

$(s_9* h_9)128 = 128(0.0122718271* 1.999990588) = 3.14157294$

4Q: $1024s_9 / 4= 3.141587725$

4Q: $1024n_9 / (height_9)^2 = 3.14160251$

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_9)^2 = 1024n_9 / heiht^2 = 3.141602509$

Value of polygon´s perimeter $2(height_9)= 1024s_9 / 2height_9 = 3.141602509$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_1)* 4= (2* 1.999990588)* 4= 15.9999247$

Area of polygon´s smallest diagonal: $(2height_9)^2 = (2* 1.999990588)^2 = 15.99984941$

Polygon perimeter equal square perimeter= s_9 * 1024= 12.56629176

Side of primeter is: $1024s_9 / 4= 3.141587738$

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As we continue down the steps the gap will get bigger and bigger.
One can see that as the number of the triangles increases the gap becomes bigger.

Step 10 Radius = 2 angle = 45°

$s_9 / 2 = c.$ $c = 0.0061359135$ adjacent side

$h = 2 - h_9 = a.$ $a = 9.4123807_{E}^{-6}$ opposite side

$s_{10} = \sqrt{a^2 + c^2} = 0.0061359207$ Hypotenuse

Area: $m = a * c / 2 = 2.887677702_{E}^{-8}$

Area: $n_9 / 2 = n = 0.0061358846$

Area: $(m + n) = n_{10} = 0.0061359135$

Area $= n_{10} * 2048 = 12.5663509$

Perimeter $= s_{10} * 2048 = 12.56636569$

¼ perimeter $= s_{10} * 512 = 3.141591423$

$Height_{10} = 2n_{10} / s_{10} = 1.999997647$

Polygon´s smallest distance between the opposite sides: $2height_{10} = 2 * 1.999997647 =$ 3.999995294.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 45º!

Height $= 2n_{10} / s_{10} = 1.999997647$

10. Cosine 0.087890625° = 0.9999988235* 2= 1.999997647

See the pages for sine 45º!

Value of polygon´s area = 3.141587725

09. Sine 0.17578125° = 0.0030679568* 1024= 3.141587725

Value of polygon´s perimeter = 3.141591422

10. Sine 0.087890625° = 0.0015339802* 2048= 3.141591422

The polygon's perimeter has a gap between the first polygon's side and the last polygon's side. Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $2048s_{10} / 2^3(height_{10}) = 0.7853987794$

Q: $2048n_{10} / (2*2)^2 = 0.7853969313$

$(s_{10} * h_{10})256 = 256(0.061359207 * 1.999997647) = 3.141587725$

4Q: $2048s_{10} / 4 = 3.141591422$

4Q: $128n_{10} / (height_{10})^2 = 3.141595118$

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It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_{10})^2 = 2048n_{10} / heiht^2 = 3.141602509$

Value of polygon´s perimeter $2(height_{10}) = 2048s_{10} / 2height_{10} = 3.141602509$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_{10})* 4= (2* 1.999997647)* 4= 15.99998118$

Area of polygon´s smallest diagonal: $(2height_{10})^2 = (2* 1.999997647)^2 = 15.99996235$

Polygon perimeter equal square perimeter= $s_{10} * 2048= 12.56636569$

Side of primeter is: $2048s_{10} / 4= 3.141591423$

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Chapter four

Note in Archimedes theory that the sides had not halved, they are different.

See “Counter argument against Archimedes theory“

Step four: the polygon’s perimeter has a gap between the first polygon’s side and the last polygon’s side. Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon. As we continue down the steps the gap will get bigger and bigger.

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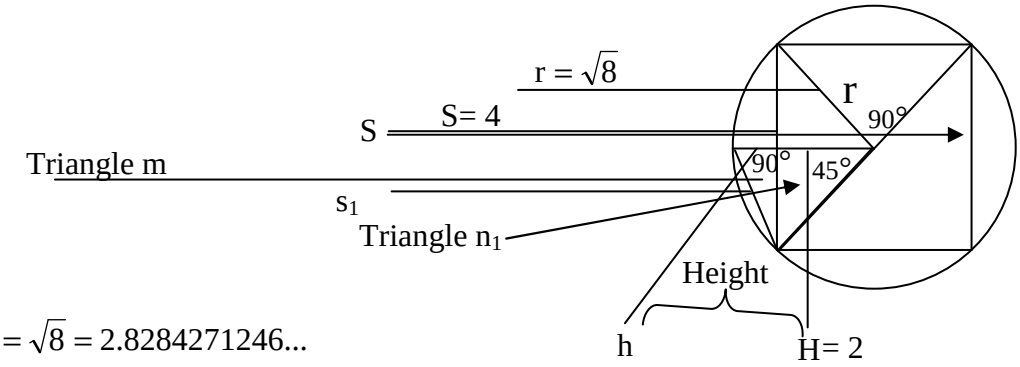
Chapter four

Step 1 Radius = $\sqrt{8}$ = 2.8284271246... angle = 45º



Radius = $\sqrt{8}$ = 2.8284271246...

$S_1 = 4$

Square area = 16

Square perimeter = 16

Triangle 2rS area is $n_1 = 4$

$H_1 = 2$

Triangle m (acs): a = opposite side of the small triangle m, s / 2= c, c = adjacent side, s = small hypotenuse and polygon side, n = big area, m = small area of triangle m.

h = height, n = area, n_1 / 2= n m+ n= n_2 O = perimeter

Values in different forms

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_2)^2 = 4n_1 / heiht^2 = 4$

Value of polygon´s perimeter $2(height_1)= 4s_1 / 2height_1= 4$

Think of the polygon as a square, for further explanation see the book.

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_1)* 4= (2* 2)* 4= 16$

See the pages of sine - & cosine 45º

Look at cosine and sine 45º, there you can see the values given for triangles are dependence on sine and cosine.

But by redraw the Q-values for squares, every circle depend on its own square. *Q* presents a precentage of a inner circle that covers its own square. *4Q* define the relation between diameter and circumference. For further information read on the book.

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Step 2 $\underline{\text{Radius} = \sqrt{8} = 2.8284271246...}$ angle $= 45^0$

$S_1 / 2 = c.$ $c = 2$ adjacent side

$h = \sqrt{8} - h_1 = a.$ $a = 08284711247...$ opposite side

$s_2 = \sqrt{a^2 + c^2} = 2.164784401$ Hypotenuse

Area: $m = a * c / 2 = 0.8284271247$

Area: $n_1 / 2 = n = 2$

Area: $(m+n) = n_2 = 2.8284271247$

Area: $n_2 * 8 = 22.627417$

Perimeter: $s_2 * 8 = 17.3182752$

¼ perimeter = $2s_2 = 4.329568801$

$\text{Height}_2 = 2n_2 / s_2 = 2.61312593$

Polygon´s smallest distance between the opposite sides: $2\text{height}_2 = 2* 2.61312593 = 5.22625186$

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 45º!

$\text{Height}_2 = 2n_2 / s_2 = 2.61312593$

02. Cosine 22.5° = $0.9238795325 * \sqrt{8} = 2.61312593$

See the pages for sine 45º!

Value of polygon´s area through radius = $8n_2/(\sqrt{8})^2 = 2.828427125$

01. Sine 45° = 0.7071067812* 4= 2.828427125

Value of polygon´s perimeter through diameter = $8s_2 / 2\sqrt{8} = 3.061467459$

02. Sine 22.5° = 0.3826834324* 8= 3.061467459

Values in different forms:

Q: $8s_2 / 2^3(\text{height}_2) = 0.8284271247$

Q: $8n_2 / (2\sqrt{8})^2 = 0.7071067812$

$(s_2 * h_2)/2 = (2.164784401 * 2.61312593) / 2 = 2.828427125$

4Q: $8s_2 / 2\sqrt{8} = 3.061467459$

4Q: $8n_2 / (\text{height}_2)^2 = 3.313708499$

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(\text{height}_2)^2 = 8n_2 / 2.61312593^2 = 3.313708499$

Value of polygon´s perimeter $2(\text{height}_2) = 8s_2 / 2\text{height}_2 = 3.313708499$

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Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: (2* height$_2$)* 4 = (2* 2.61312593)* 4=20.90500744

Area of polygon´s smallest diagonal: (2height$_2$)^2 = (2* 2.61312593)^2 = 27.3137085

Polygon perimeter equal square perimeter= 8s_2 = 17.3182752 as inner polygon

Side of primeter is: 12s_2 / 4= 4.329568801

Step 3 Radius = $\sqrt{8}$ = 2.8284271246... angle = 45^0

S_2 / 2= c.	c = 1.0823922	adjacent side
$h = \sqrt{8} - h_2 = a$	a = 0.215301195	opposite side
$s_3 = \sqrt{a^2 + c^2} = 1.103597517$		Hypotenuse

Area: m = a * c / 2= 0.1165201671

Area: n_2 / 2= n = $\sqrt{2}$ =1.414213562

Area: (m+ n) = n_3 = 1.530733729

Area = n_3 * 16= 24.49173967

Perimeter = s_3 * 16= 17.65756027

¼ perimeter = 4s_3 = 4.414390069

Height$_3$ = 2n_3 / s_3 = 2.774079691

Polygon´s smallest distance between the opposite sides: 2height$_2$ = 2* 2.774079691= 5.548159381.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle.

See the pages for cosine 45º!

Height$_3$ = 2n_3 / s_3 = 2.774079691

03. Cosine 11.25° = 0.9807852804* $\sqrt{8}$ = 2.61312593

See the pages for sine 45º!

Value of polygon´s area through radius = 16n_3 / $(\sqrt{8})^2$ = 3.061467459

02. Sine 22.5° = 0.3826834324* 8= 3.061467459

Value of polygon´s perimeter through diameter = 16s_3 / 2$\sqrt{8}$ = 3.121445152

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03. Sine 11.25° = 0.195090322* 16= 3.121445152

Values in different forms:

Q: $16s_3 / 2^3(height_3) = 0.7956494695$

Q: $16n_3 / (2\sqrt{8})^2 = 0.7653668647$

$s_3 * h_3 = 1.103597517 * 2.774079691 = 3.061467459$

4Q: $16s_3 / 2\sqrt{8} = 3.121445152$

4Q: $16n_3 / (height_3)^2 = 3.182597878$

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_3)^2 = 16n_3 / 2.774079691^2 = 3.182597878$

Value of polygon´s perimeter $2(height_3) = 16s_3 / 2height_3 = 3.182597878$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_3)* 4 = (2* * 2.774079691)* 4 = 22.19263753$

Area of polygon´s smallest diagonal: $(2height_3)^2 = (2* 2.774079691)^2 = 30.78207252$

Polygon perimeter equal square perimeter= $16s_3 = 17.65756027$ as inner polygon

Side of primeter is: $16s_3 / 4 = 4.414390069$

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Step 4 Radius = $\sqrt{8}$ = 2.8284271246... angle = 45°

The polygon's perimeter has a gap between the first polygon's side and the last polygon's side.

$S_3 / 2 = c.$ c = 0.5517987586 adjacent side

$h = \sqrt{8} - h_3 = a$ a = 0.0543474341 opposite side

$s_4 = \sqrt{a^2 + c^2} = 0.5544686768$ Hypotenuse

Area: m = a * c / 2= 0.0149944233

Area: $n_3 / 2 = n = 0.7653668647$

Area: (m+ n) = n_4 = 0.7803612881

Area = n_4* 32= 24.97156122

Perimeter = s_4 * 32= 17.74299766

¼ perimeter = $8s_4$ = 4.435749414

$Height_4 = 2n_4 / s_4$ = 2.814807475

Polygon´s smallest distance between the opposite sides: $2height_4$ = 2* 2.814807475= 5.62961495.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 45°!

$Height_4 = 2n_4 / s_4$ = 2.814807475

04. Cosine 5.625° = 0.9951847267* $\sqrt{8}$ = 2.814807475

See the pages for sine 45°!

Value of polygon´s area through radius = $32n_4 / (\sqrt{8})^2$ = 3.121445152

03. Sine 11.25° = 0.195090322 * 16 = 3.121445152

Value of polygon´s perimeter through diameter = $32s_4 / 2\sqrt{8}$ = 3.136548491

04. Sine 5.625° = 0.0980171403 * 32 = 3.136548491

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon. As we continue down the steps the gap will get bigger and bigger.

Values in different forms:

Q: $32s_4 / 2^3(height_4)$ = 0.879312269

Q: $32n_4 / (2\sqrt{8})^2$ = 0.7803612881

$2(s_4 * h_4)$= 2(0.5544686768* 2.814807475) = 3.121445152

4Q: $32s_4 / 2\sqrt{8}$ = 3.136548491

4Q: $32n_4 / (height_4)^2$ = 3.151724907

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It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_4)^2 = 32n_4 / 2.814807475^2 = 3.151724907$

Value of polygon´s perimeter $2(height_4) = 32s_4 / 2height_4 = 3.151724907$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_4)* 4 = (2* 2.814807475)* 4 = 22.5184598$

Area of polygon´s smallest diagonal: $(2height_4)^2 = (2* 2.814807475)^2 = 31.69256449$

Polygon perimeter equal square perimeter= $32s_4 = 17.65756027$ as inner polygon

Side of primeter is: $32s_4 / 4 = 4.435749414$

As we continue down the steps the gap will get bigger and bigger.

Step 5 $\underline{\text{Radius} = \sqrt{8} = 2.8284271246...}$ $\text{angle} = 45^o$

$S_4 / 2 = c.$	c = 0.2772343384	adjacent side
$h = \sqrt{8} - h_4 = a$	a = 0.0136196497	opposite side
$s_5 = \sqrt{a^2 + c^2} = 0.277568682$		Hypotenuse

Area: $m = a* c / 2 = 0.0018879173$

Area: $n_4 / 2 = n = 0.390180644$

Area: $(m+ n) = n_5 = 0.3920685613$

Area $= n_5 * 64 = 25.09238792$

Perimeter $= s_5 * 64 = 17.76439565$

¼ perimeter $= 16s_5 = 4.441098913$

$Height_5 = 2n_5 / s_5 = 2.82502016$

Polygon´s smallest distance between the opposite sides: $2height_5 = 2* 2.82502016 = 5.650040321$

You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle.

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See the pages for cosine 45º!

$Height_5 = 2n_5 / s_5 = 2.82502016$

05. Cosine 2.8125° = 0.9987954562* $\sqrt{8}$ = 2.814807475

See the pages for sine 45º!

Value of polygon´s area through radius = $64n_5 / (\sqrt{8})^2 = 3.136548491$

04. Sine 5.625° = 0.0980171403 * 32 = 3.136548491

Value of polygon´s perimeter through diameter = $64s_5 / 2\sqrt{8} = 3.140331157$

05. Sine 2.8125° = 0.0490676743 * 64 = 3.140331157

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $64s_5 / 2^3(height_5) = 0.7860295963$

Q: $64n_5 / (2\sqrt{8})^2 = 0.7841371226$

$4(s_5 * h_5) = 4(0.277568682 * 2.82502016) = 3.1136548491$

4Q: $64s_5 / 2\sqrt{8} = 3.140331157$

4Q: $64n_5 / (height_5)^2 = 3.144118385$

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_5)^2 = 64n_5 / 2.82502016^2 = 3.144118385$

Value of polygon´s perimeter $2(height_5) = 64s_5 / 2height_5 = 3.144118385$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2 * height_5) * 4 = (2 * 2.82502016) * 4 = 22.60016128$

Area of polygon´s smallest diagonal: $(2height_5)^2 = (2 * 2.82502016)^2 = 31.92295562$

Polygon perimeter equal square perimeter= $64s_5 = 17.65756027$ as inner polygon

Side of primeter is: $64s_5 / 4 = 4.441098913$

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As we continue down the steps the gap will get bigger and bigger.

Step 6 Radius = $\sqrt{8}$ = 2.8284271246... angle = 45°

$S_5 / 2 = c.$ c = 0.138784341 adjacent side

$h = \sqrt{8} - h_5 = a$ a = 0.0034069643 opposite side

$s_6 = \sqrt{a^2 + c^2} = 0.1388261529$ Hypotenuse

Area: m = a * c / 2= 2.364166505 $_E{}^{-4}$

Area: $n_5 / 2 = n = 0.1960342807$

Area: (m+ n) = n_6 = 0.1962706973

Area= n_6 * 128= 25.12264926

Perimeter= s_6 * 128= 17.76974757

¼ perimeter= $32s_6$= 4.442436891

Height$_6$ = $2n_6 / s_6$ = 2.827575255

Polygon´s smallest distance between the opposite sides: 2height$_6$ = 2* 2.827575255= 5.655150511

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 45º!

Height= $2n_6 / s_6$ = 2.827575255

06. Cosine 1.40625° = 0.9996988187* $\sqrt{8}$ = 2.827575255

See the pages for sine 45º!

Value of polygon´s area through radius = $128n_6 / (\sqrt{8})^2$ = 3.140331157

05. Sine 2.8125° = 0.0490676743 * 64= 3.140331157

Value of polygon´s perimeter through diameter = $128s_6 / 2\sqrt{8}$ = 3.141277251

06. Sine 1.40625° = 0.0245412285 * 128= 3.141277251

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $128s_6 / 2^3$(height$_6$) = 0.7855559075

Q: $128n_6 / (2\sqrt{8})^2$ = 0.7850827892

(s_5* h_6)8 = 8(0.1388261529* 2.827575255) = 3.140331157

4Q: $128s_6 / 2\sqrt{8}$ = 3.141277251

4Q: $128n_6 /$ (height$_6$)^2 = 3.14222363

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It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_6)^2 = 128n_6 / 2.827575255^2 = 3.14222363$

Value of polygon´s perimeter $2(height_6) = 128s_6 / 2height_6 = 3.14222363$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_6)* 4 = (2* 2.827575255)* 4 = 22.62060204$

Area of polygon´s smallest diagonal: $(2height_6)^2 = (2* 2.827575255)^2 = 31.98072729$

Polygon perimeter equal square perimeter= $128s_6 = 17.76974757$ as inner polygon

Side of primeter is: $128s_6 / 4 = 4.442436891$

As we continue down the steps the gap will get bigger and bigger.

Step 7 Radius $= \sqrt{8} = 2.8284271246...$ angle $= 45^o$

$S_6 / 2 = c.$	$c = 0.0694130764$	adjacent side
$h = \sqrt{8} - h_6 = a$	$a = 8.518693692\ _E{}^{-4}$	opposite side
$s_7 = \sqrt{a^2 + c^2} = 0.0694183035$		Hypotenuse

Area: $m = a * c / 2 = 2.956543682\ _E{}^{-5}$

Area: $n_6 / 2 = n = 0.0981353487$

Area: $(m+ n) = n_7 = 0.0981649141$

Area $= n_7 * 256 = 25.13021801$

Perimeter $= s_7 * 256 = 17.7710857$

¼ perimeter $= 64s_7 = 4.442771424$

$Height_7 = 2n / s_7 = 2.828214149$

Polygon´s smallest distance between the opposite sides: $2height_7 = 2* 2.828214149 = 5.656428299$

You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle.

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See the pages for cosine 45º!

$Height_7 = 2n_7 / s_7 = 2.828214149$

07. Cosine 0.703125° = 0.9999247018* $\sqrt{8}$ = 2.828214149

See the pages for sine 45º!

Value of polygon´s area through radius = $256n_7 / (\sqrt{8})^2 = 3.141277251$

06. Sine 1.40625° = 0.0245412285* 128= 3.141277251

Value of polygon´s perimeter through diameter = $256s_7 / 2\sqrt{8} = 3.141513801$

07. Sine 0.703125° = 0.0122715383* 256= 3.141513801

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $256s_7 / 2^3(height_7) = 0.7853193127$

Q: $256n_7 / (2\sqrt{8})^2 = 0.7850827892$

$(s_7 * h_7)8 = 8(0.0694183035 * 2.828214149) = 3.141277251$

4Q: $256s_7 / 2\sqrt{8} = 3.141513801$

4Q: $256n_7 / (height_7)^2 = 3.141750369$

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_7)^2 = 256n_7 / 2.827575255^2 = 3.141750369$

Value of polygon´s perimeter $2(height_7) = 256s_7 / 2height_7 = 3.141750369$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2 * height_7) * 4 = (2 * 2.828214149) * 4 = 22.62571319$

Area of polygon´s smallest diagonal: $(2height_7)^2 = (2 * 2.828214149)^2 = 31.99518109$

Polygon perimeter equal square perimeter= $256s_7 = 17.7710857$ as inner polygon

Side of primeter is: $256s_7 / 4 = 4.442771424$

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As we continue down the steps the gap will get bigger and bigger.

Step 8 Radius = $\sqrt{8}$ = 2.8284271246... angle = 45°

S_7 / 2= c. c = 0.0347091517 adjacent side

$h = \sqrt{8} - h_7 = a$ a = 2.129753607 $_E{}^{-4}$ opposite side

$s_8 = \sqrt{a^2 + c^2}$ = 0.0347098052 Hypotenuse

Area: m = a * c / 2= 3.696097057 $_E{}^{-6}$

Area: n_7 / 2= n = 0.049082457

Area: (m+ n) = n_8 = 0.0490861531

Area = n_8 * 512= 25.13211041

Perimeter = s_8 * 512= 17.77142024

¼ perimeter= 128s_8 = 4.442855059

Height$_8$ = 2n_8 / s_8 = 2.82837388

Polygon´s smallest distance between the opposite sides: 2height$_8$ = 2* 2.82837388= 5.656747761

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 45º!

Height$_8$ = 2n_8 / s_8 = 2.82837388

08. Cosine 0.3515625° = 0.9999811753* $\sqrt{8}$ = 2.82837388

See the pages for sine 45º!

Value of polygon´s area through radius = 512n_8 / $(\sqrt{8})^2$ = 3.141513801

07. Sine 0.703125° = 0.0122715383* 256= 3.141513801

Value of polygon´s perimeter through diameter = 512s_8 / 2$\sqrt{8}$ = 3.41157294

08. Sine 0.3515625° = 0.0061358846* 512= 3.14157294

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: 512s_8 / 2^3(height$_8$) = 0.7854080202

Q: 512n_8 / $(2\sqrt{8})^2$ = 0.7853784503

(s_8* h_8)32= 32(0.0347098052* 2.82837388) = 3.141513801

4Q: 512s_8 / 2$\sqrt{8}$ = 3.14157294

4Q: 512n_8 / (height$_8$)^2 = 3.141632081

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It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_8)^2 = 512n_8 / 2.82837388^2 = 3.141632081$

Value of polygon´s perimeter $2(height_8) = 512s_8 / 2height_8 = 3.141632081$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_8)* 4 = (2* 2.82837388)* 4 = 22.62699104$

Area of polygon´s smallest diagonal: $(2height_8)^2 = (2* 2.82837388)^2 = 31.99879522$

Polygon perimeter equal square perimeter= $512s_8 = 17.77142024$ as inner polygon

Side of primeter is: $512s_8 / 4 = 4.442855059$

As we continue down the steps the gap will get bigger and bigger.

Step 9 $\underline{\text{Radius} = \sqrt{8} = 2.8284271246...}$ angle = 45^o

$S_8 / 2 = c.$	$c = 0.0173549026$	adjacent side
$h = \sqrt{8} - h_8 = a$	$a = 5.32443414\ _E{}^{-5}$	opposite side
$s_9 = \sqrt{a^2 + c^2} = 0.0173549843$		Hypotenuse

Area: $m = a * c / 2 = 4.620251789\ _E{}^{-7}$

Area: $n_8 / 2 = n = 0.0245430766$

Area: $(m+ n) = n_9 = 0.0245435386$

Area = $n_9 * 1024 = 25.13258352$

Perimeter = $s_9 * 1024 = 17.77150387$

¼ perimeter= $256s_9 = 4.442875968$

$Height_9 = 2n_9 / s_9 = 2.828413814$

Polygon´s smallest distance between the opposite sides: $2height_9 = 2* 2.828413814 = 5.656827627$

You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle.

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See the pages for cosine 45º!

$Height_9 = 2n_9 / s_9 = 2.828413814$

09. Cosine 0.17578125° = 0.9999952938* $\sqrt{8}$ = 2.828413814

See the pages for sine 45º!

Value of polygon´s area through radius = $1024n_9 / (\sqrt{8})^2 = 3.14157294$

08. Sine 0.3515625° = 0.0061358846* 512 = 3.14157294

Value of polygon´s perimeter through diameter = $1024s_9 / 2\sqrt{8} = 3.141587725$

09. Sine 0.17578125° = 0.0030679568 * 1024 = 3.141587725

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $1024s_9 / 2^3(height_9) = 0.7854006276$

Q: $1024n_9 / (2\sqrt{8})^2 = 0.7853932351$

$(s_9 * h_9)64 = 64(0.0173549843 * 2.828413814) = 3.14157294$

4Q: $1024s_9 / 2\sqrt{8} = 3.141587725$

4Q: $1024n_9 / (height_9)^2 = 3.14160251$

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_9)^2 = 1024n_9 / 2.828413814^2 = 3.14160251$

Value of polygon´s perimeter $2(height_9) = 1024s_9 / 2height_9 = 3.14160251$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2 * height_9) * 4 = (2 * 2.828413814) * 4 = 22.62731051$

Area of polygon´s smallest diagonal: $(2height_9)^2 = (2 * 2.828413814)^2 = 31.99969881$

Polygon perimeter equal square perimeter= $1024s_9 = 17.77150387$ as inner polygon

Side of primeter is: $1024s_9 / 4 = 4.442875968$

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As we continue down the steps the gap will get bigger and bigger.

Step 10 Radius = $\sqrt{8}$ = 2.8284271246... angle = 45°

$S_9 / 2 = c.$ c = 0.0086774921 adjacent side

$h = \sqrt{8} - h_9 = a$ a = $1.33111169_{E}{}^{-5}$ opposite side

$s_{10} = \sqrt{a^2 + c^2} = 0.0086775023$ Hypotenuse

Area: m = a * c / 2= $5.775355604_{E}{}^{-8}$

Area: $n_9 / 2 = n = 0.0122717693$

Area: (m+ n) = $n_{10} = 0.0122718271$

Area = n_{10} * 2048= 25.1327018

Perimeter = s_{10} * 2048= 17.77152478

¼ perimeter= $512s_{10}$ = 4.442881196

$Height_{10} = 2n_{10} / s_{10}$ = 2.828423797

Polygon´s smallest distance between the opposite sides: $2height_{10}$ = 2* 2.828423797= 5.656847594

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 45º!

$Height_{10} = 2n_{10} / s_{10}$ = 2.828423797

10. Cosine 0.087890625° = 0.9999988235* $\sqrt{8}$ = 2.828423797

See the pages for sine 45º!

Value of polygon´s area through radius = $2048n_{10} / (\sqrt{8})^2$ = 3.141587725

09. Sine 0.17578125° = 0.0030679568 * 1024 = 3.141587725

Value of polygon´s perimeter through diameter = $2048s_{10} / 2\sqrt{8}$ = 3.141591422

10. Sine 0.087890625° = 0.0015339802 * 2048 = 3.141591422

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $2048s_{10} / 2^3(height_{10})$ = 0.7853987794

Q: $2048n_{10} / (2\sqrt{8})^2$ = 0.7853996313

(s_{10}* h_{10})128= 128(0.0086775023* 2.828423797) = 3.141587725

4Q: $2048s_{10} / 2\sqrt{8}$ = 3.141591422

4Q: $2048n_{10} / (height_{10})^2$ = 3.141595118

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It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_{10})^2 = 2048n_{10} / 2.828413814^2 = 3.141595118$

Value of polygon´s perimeter $2(height_{10}) = 2048s_{10} / 2height_{10} = 3.141595118$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_{10})* 4 = (2* 2.828423797)* 4 = 22.62739038$

Area of polygon´s smallest diagonal: $(2height_{10})^2 = (2* 2.828423797)^2 = 31.9999247$

Polygon perimeter equal square perimeter= $2048s_{10} = 17.77152478$ as inner polygon

Side of primeter is: $2048s_{10} / 4 = 4.442881196$

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Chapter five

Note in Archimedes theory that the sides had not halved, they are different.

See “Counter argument against Archimedes theory“

Step two: the polygon’s perimeter has a gap between the first polygon’s side and the last polygon’s side. Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon. As we continue down the steps the gap will get bigger and bigger.

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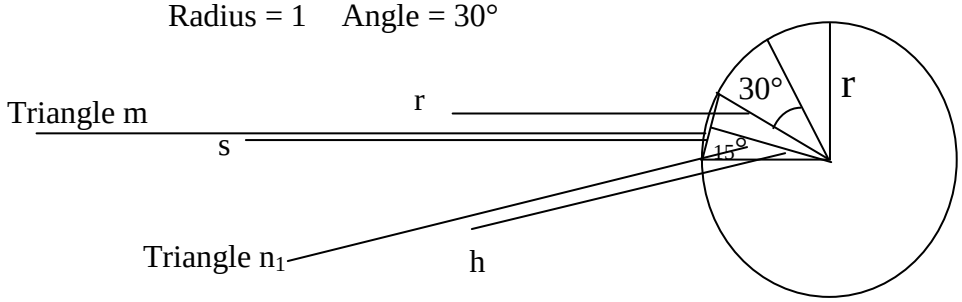
Chapter five

Step 1 Radius = 1 Angle = 30°



Radius = 1

The first triangle on step one is an isoscelese triangle with the angle 30° and the sides equals radius 1.

The circle has 12 isoscelese triangles of 30°. Choose one of these triangles. The height of the 30° triangle divide the triangle to two right angeled triangles, with angles of 15°, 75° and 90°. See calculations below.

See the pages of sine - & cosine 45º

Look at cosine and sine 45º, there you can see the values given for triangles are dependence on cosine and sine.

But by redraw the Q-values for squares, every circle depend on its own square. *Q* presents a precentage of a inner circle that covers its own square. *4Q* define the relation between diameter and circumference. For further information read book.

r = 1 r is always hypotenuse.

Base = s s reforms (builds) the polygon´s side.

1. sine of 15° * 2 = base för triangle with angle 30°
2. s / 2= the adjacent side of triangle with angle 15°

Triangle m (acs): a = opposite side of the small triangle m, s / 2= c, c = adjacent side,

s = small hypotenuse and polygon side, n = big area, m = small area of triangle m.

h = height, n = area, $n_1 / 2 = n$ $m + n = n_2$ O = perimeter

Compare the values with the sine and the number of height with the cosine, look att the pages of sine & cosine.

triangles.

Height. A= area. O= perimeter

sine of 15° = 0.2588190451

$h = \sqrt{r^2 - s^2} = \sqrt{1^2 - 0.2581190451^2} = 0.9659258263$

Cosine of 15° = 0.9659258263

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S_1 = 2* sine of 15° = 0.51763880902

Area: n_1 = s * h / 2= 0.25

Area: $12n_1$ = 0.25 * 12= 3

Perimeter = 6.211657082

$Height_1$ = 0.9659258263

Cosine of 15° = 0.9659258263

Value of area: (0.25 * 12) = 3

Value of perimeter: (6.211657082 / 2) = 3.105828542

Note: the isoscelese triangle has changed to a right angle triangle. See the picture above!

Values in different forms:

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_2)^2 = 12n_1 /heiht^2$ = 3.215390309

Value of polygon´s perimeter $2(height_2)= 12s_1 /2height_1$ = 3. 215390309

Think of the polygon as a square, for further explanation see the book.

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_1)* 4$ = (2* 0.9659258263)* 4= 7.72740661

Area of polygon´s smallest diagonal: $(2height_1)^2$ = (2* 0.9659258263)^2 = 3.732050808

Step 2 Radius = 1 angle = 30°

As we continue down the steps the gap will get bigger and bigger.

S_1 / 2= c. c = 0.2588190451 adjacent side

h = 1-h_1 = a a = 0.3340741737 opposite side

$s_2 = \sqrt{c^2 + h^2}$ = 0.2610523844 Hypotenuse

Area: m = c * h / 2= 0.0044095226

Area: n_1 / 2= n = 0.125

Area: (m+ n) = n_2 = 0.1294095226

Area = n_2 * 24= 3.105828542

Perimeter = s_2 * 24= 6.265257226

¼ perimeter = s_2 * 6= 1.566314306

$Height_2 = 2n_2 / s_2$ = 0.9914448614

Polygon´s smallest distance between the opposite sides: $2height_2$= 2* 0.991444861= 1.982889722.

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You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle.

Compare the values with the sine and the number of height with the Cosine, look att the pages of sine & sosine.

See the pages for cosine 30º!

$Height_2 = 2n_2 / s_2 = 0.9914448614$

03. Cosine 7.5° = 0.9914448614

See the pages for sine 30º!

Value of polygon area through diameter= 3.105828541

02. Sine 15° = 0.2588190451* (24/2) = 3.105828541

Value of perimeter through diameter= 3.132628613

03. Sine 7.5° = 0.1305261922* (48/2) = 3.132628613

The polygon's perimeter has a gap between the first polygon's side and the last polygon's side. Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms

Q: $24s_2 / 2^3(height_2) = 0.8107839464$

Q: $24n_2 /(2*1)^2 = 0.7764571353$

$(s_2* h_2)* 12= (0.2610523844* 0.991444861)* 12= 3.025886882$

4Q: $24s_2 / 2\sqrt{8} = 3.132628613$

4Q: $24n_2 / (height_2)^2 = 3.328816998$

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_2)^2 = 24n_2 /heiht^2 = 3.159659944$

Value of polygon´s perimeter $2(height_2)= 24s_2 /2height_2= 3.159659944$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2* height_2)* 4 = (2* 0.9914448614)* 4= 7.931558891$

Area of diameter: $(2height_2)^2 = (2* 0.9914448614)^2 = 3.931851653$

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Polygon perimeter equal square perimeter= 6.265257226

Side of primeter is: $24s_2 / 4$= 1.566314307

As we continue down the steps the gap will get bigger and bigger.

Step 3 Radius = 1 angle = 30°

$S_2 / 2$= c. c = 0.1305261922 adjacent side

h = 1-h_2 = a a = 0.0085551386 opposite side

$s_3 = \sqrt{c^2 + h^2}$ = 0.1308062585 Hypotenuse

Area: m = c * h / 2= 5.583348344 $_E{}^{-4}$

Area: $n_2 / 2$ = n = 0.0647047613

Area: (m+ n) = n_3 = 0.0652630961

Area: n_3 * 48= 3.132628613

Perimeter = s_3 * 48= 6.278700406

¼ perimeter = s_3 * 12= 1.569675102

$Height_3 = 2n_3 / s_3$ = 0.9978589232

Polygon´s smallest distance between the opposite sides: $2height_3$ = 2* 0.9978589232= 1.995717846.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

Compare the values with the sine and the number of height with the Cosine, look att the pages of Sine & Cosine.

See the pages for cosine 30º!

$Height_3 = 2n_3 / s_3$ = 0.9978589232

04. Cosine 3.75° = 0.9978589232

See the pages for sine 30º!

Value of polygon area = 3.132628613

03. Sine 7.5° = 0.1305261922* (48/2) = 3.132628613

Value of polygon perimeter = 3.139350203

04. Sine 3.75° = 0.0654031292* (96/2) = 3.139350203

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms

Q: $48s_3 / 2^3(height_3)$ = 0.7865215538

Q: $48n_3 /(2*1)^2$ = 0.7831571533

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$(s_3 * h_3) * 24 = (0.1308062585 * 0.9978589232) * 24 = 3.132628613$

4Q: $48s_3 / 2\sqrt{8} = 3.139350203$

4Q: $24n_3 / (height_3)^2 = 3.146086215$

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_3)^2 = 48n_3 / (heiht^2)_3 = 3.146086215$

Value of polygon´s perimeter $2*(height_3) = 48s_3 / 2height_3 = 3.146086215$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2height_3) * 4 = (2 * 0.9978589232) * 4 = 7.982871386$

Area of diameter: $(2height_3)^2 = (2 * 0.9978589232)^2 = 3.982889722$

Polygon perimeter equal square perimeter= 6.278700406

Side of primeter is: $48s_3 / 4 = 1.569675102$

As we continue down the steps the gap will get bigger and bigger.

Step 4	Radius = 1	angle = 30°
$s_3 / 2 = c.$	$c = 0.0654031292$	adjacent side
$h = 1 - h_3 = a$	$a = 0.0021410768$	opposite side
$s_4 = \sqrt{c^2 + h^2}$	$= 0.0654381656$	Hypotenuse

Area: $m = c * h / 2 = 7.001656006_{E}^{-5}$

Area $n_3 / 2 = n = 0.0326315481$

Area: $(m + n) = n_4 = 0.0327015646$

Area $= n_4 * 96 = 3.139350203$

Perimeter $= s_4 * 96 = 6.282063902$

¼ perimeter $= s_4 * 24 = 1.570515975$

$Height_4 = 2n_4 / s_4 = 0.9994645875$

Polygon´s smallest distance between the opposite sides: $2height_4 = 2 * 0.9994645875 = 1.998929175$.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle. Compare the values with the sine and the number of height with the Cosine, look att the pages of Sine & Cosine.

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See the pages for cosine 30º!

$Height_4 = 2n_4 / s_4 = 0.9994645875$

05. Cosine 1.875° = 0.9994645875

See the pages for sine 30º!

Value of polygon area = 3.139350203

04. Sine 3.75° = 0.0654031292* (96/2) = 3.139350203

Value of polygon perimeter = 3.141031951

05. Sine 1.875° = 0.0327190828* (192/2) = 3.141031951

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms

Q: $96s_4 / 2^3(height_4) = 0.7856786499$

Q: $96n_4 /(2*1)^2 = 0.7848375508$

$(s_4* h_4)* 48= (0.0654381656* 0.9994645875)* 48= 3.132628613$

4Q: $96s_4 / 2\sqrt{8} = 3.141031951$

4Q: $96n_4 / (height_4)^2 = 3.1427146$

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_4)^2 = 96n_4 /(heiht^2)_4 = 3.142714599$

Value of polygon´s perimeter $2(height_4)= 96s_4 /2height_4 = 3.142714599$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2height_4)* 4= (2* 0.9994645875)* 4= 7.9957167$

Area of diameter: $(2height_4)^2 = (2* 0.9994645875)^2 = 3.995717847$

Polygon perimeter equal square perimeter= 6.282063902.

Side of primeter is: $96s_4 / 4= 1.570515976$

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As we continue down the steps the gap will get bigger and bigger.

Step 5 Radius = 1 angle = 30°

$s_4 / 2 = c.$ $c = 0.0327190828$ adjacent side

$h = 1-h_4 = a$ $a = 5.354125236_{E}^{-4}$ opposite side

$s_5 = \sqrt{c^2 + h^2} = 0.0327234633$ Hypotenuse

Area: $m = c * h / 2 = 8.759103352_{E}^{-6}$

Area: $n_4 / 2 = n = 0.0163507828$

Area: $(m+ n) = n_5 = 0.0163595414$

Area = $n_5 * 192 = 3.141031951$

Perimeter = $s_5 * 192 = 6.282904945$

¼ perimeter = $s_5 * 48 = 1.570726236$

$Height_5 = 2n_5 / s_5 = 0.9998661379$

Polygon´s smallest distance between the opposite sides: $2height_5 = 2* 0.9998661379 = 1.999732276$.

You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle. Compare the values with the sine and the number of height with the Cosine, look att the pages of Sine & Cosine.

See the pages for cosine 30º!

$Height_5 = 2n_5 / s_5 = 0.9998661379$

06. Cosine 0.9375° = 0.9998661379

See the pages for sine 30º!

Value of polygon´s area = 3.141031951

05. Sine 1.875° = 0.0327190828* (192/2) = 3.141031951

Value of polygon´s perimeter = 3.141452472

06. Sine 0.9375° = 0.0163617316* (384/2) = 3.141452472

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms

Q: $192s_5 / 2^3(height_5) = 0.7854682625$

Q: $192n_5 / (2*1)^2 = 0.7852579877$

$(s_5* h_5)* 96 = (0.0327234633* 0.9998661379)* 96 = 3.141031951$

4Q: $192s_5 / 2 = 3.141452472$

4Q: $192n_5 / (height_5)^2 = 3.14187305$

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It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_5)^2 = 192n_5/heiht^2 = 3.14187305$

Value of polygon´s perimeter $2(height_5) = 192n_5 / 2heiht_5 = 3.14187305$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2height_5)* 4= (2* 0.9998661379)* 4= 7.998929103$

Area of diameter: $(2height_5)^2 = (2* 0.9998661379)^2 = 3.998929175$

Polygon perimeter equal square perimeter= $192s_5 / 2height_5 = 6.282904945$

Side of primeter is: $192s_5 / 4 = 1.570726236$

Chapter six

Note in Archimedes theory that the sides had not halved, they are different.

See "Counter argument against Archimedes theory"

Step two: the polygon's perimeter has a gap between the first polygon's side and the last polygon's side. Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon. As we continue down the steps the gap will get bigger and bigger.

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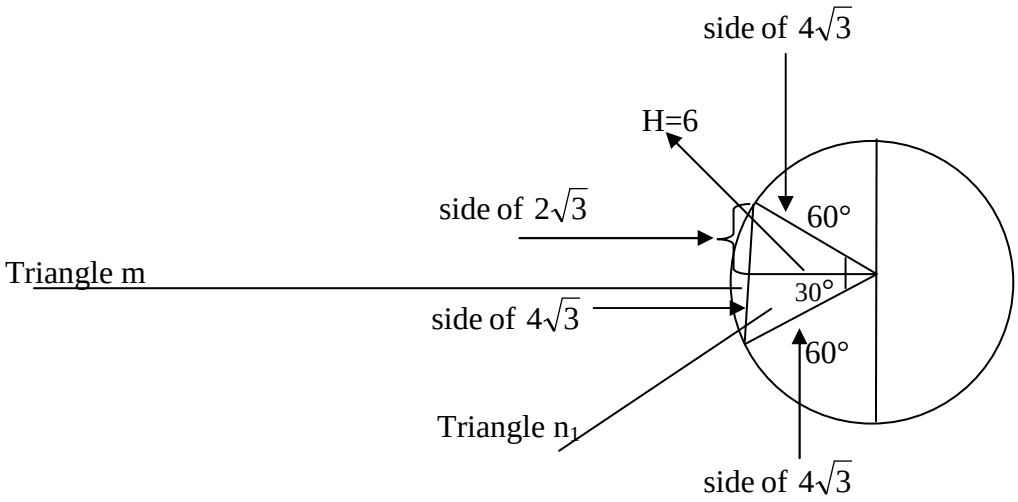
Chapter six

Step 1 Radius = $4\sqrt{3}$ angle = 60º



The first tiangle is equilateral triangle and it turns to the right angled triangle again.

The first triangle with sides of $4\sqrt{3}$ and angles 60º

$S_1 = 4\sqrt{3}$

Height$_1$ = 6_1

Area of triangle rrs : n_1 $n_1 = 2\sqrt{3} * 6 = 20.78460969$

Circumference of triangle rrs = $4\sqrt{3} * 3 = 20.78460969$

Tiangle rhc

Hypotenuse and radius : $r = 4\sqrt{3}$

Height$_1$ or adjacent side = 6

Opposite side : $c = 2\sqrt{3}$

Area of triangle rh$_1$c: n_1 / 2= n = 10.39230485

Area of trianle rhc: $2\sqrt{3} * 6 \div 2 = 10.39230485$

n = 10.39230485

See the pages of sine - & cosine 45º

Look at cosine and sine 45º, there you can see the values given for triangles are dependence on cosine and sine.

But by redraw the Q-values for squares, every circle depend on its own square. *Q* presents a precentage of a inner circle that covers its own square. *4Q* define the relation between diameter and circumference. For further information read book.

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Values in different forms

Think of the polygon as a square, for further explanation see the book.

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_1)^2 = 6n_1 / heiht^2 = 3.464101615$

Value of polygon´s perimeter $2(height_1) = 6s_1 / 2height_1 = 3.464101615$

Abbrivations:

Triangle of acs: a = opposite. s / 2= c. c = adjacent. s = hypotenuse

m = area of little triangle.

h = height. n = area. $n_1 / 2 = n$ $m + n = n_{2,3,4,5...}$ o = perimeter

Compare the values with the sine and the number of height with the cosine, look att the pages of Sine & Cosine.

Step 2 Radius $= 4\sqrt{3}$ angle = 60º

$s_1 / 2 = c$ $c = 2\sqrt{3}$ $c = 3.464101615$ adjacent side

$h = 4\sqrt{3} - h_1 = a$ $a = 4\sqrt{3} - 6 = 0.9282032303$ opposite side

$s_2 = \sqrt{a^2 + c^2} = 3.586301889$ Hypotenuse

Area: $m = a * c / 2 = 1.607695155$

Area: $n_1 / 2 = n = 10.39230485$

Area: $(m+n) = n_2 = 12$

Area $= n_2 * 12 = 144$

Perimeter $= s_2 * 12 = 43.03562266$

¼ perimeter $= s_2 * 3 = 10.75890567$

$Height_2 = 2n_2 / s_2 = 6.69213043$

Polygon´s smallest distance between the opposite sides: $2height_2 = 2* 6.69213043 = 13.38426086$

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 30º!

$Height_2 = 2n_2 / s_2 = 6.69213043$

02. Cosine 15° = 0.9659258263* $4\sqrt{3} = 6.69213043$

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See the pages for sine 30º!

Value of polygon´s area through radius = $12n_2 / (4\sqrt{3})^2 = 3$

01. Sine 30° = 0.5* 6= 3

Value of polygon´s perimeter through diameter = $12s_2 / 2(4\sqrt{3}) = 3.105828541$

02. Sine 15° = 0.2588190451* 12= 3.105828541

Values in different forms:

Q: $12s_2 / 2^3(\text{height}_2) = 0.8038475773$

Q: $12n_2 / (2(4\sqrt{3}))^2 = 0.75$

4Q: $12s_2 / 2(4\sqrt{3}) = 3.105828541$

4Q: $12n_2 / (\text{height}_2)^2 = 3.215390309$

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(\text{height}_2)^2 = 12n_2 / 6.69213043^2 = 3.215390309$

Value of polygon´s perimeter $2(\text{height}_2) = 12s_2 / 2\text{height}_2 = 3.215390309$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2\text{height}_2)* 4 = (2* 6.69213043)* 4 = 53.53704344$

Area of polygon´s smallest diagonal: $(2\text{height}_2)^2 = (2* 6.69213043)^2 = 179.1384388$

Polygon perimeter equal square perimeter= $12s_2 = 43.03562266$ as inner polygon

Side of primeter is: $12s_2 / 4 = 10.75890567$

The polygon's perimeter has a gap between the first polygon's side and the last polygon's side.

Step 3	Radius = $4\sqrt{3}$	angle = 60º
$S_2 / 2 = c$	c = 1.793150944	adjacent side
$h = r - h_2 = a$	a = 0.2360728004	opposite side
$s_3 = \sqrt{a^2 + c^2} = 1.808623973$		Hypotenuse

Area: $m = a * c / 2 = 0.2116570825$

Area: $n_2 / 2 = n = 6$

Area: $(m+ n) = n_3 = 6.211657082$

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Area = n_3 * 24= 149.07977

Perimeter = s_3 * 24= 43.40697536

¼ perimeter = s_3 * 3= 10.85174384

$Height_3 = 2n_3 / s_3$ = 6.868931491

Polygon´s smallest distance between the opposite sides: $2height_3$ = 2* 6.868931491= 13.73786298

You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle.

See the pages for cosine 30º!

$Height_3 = 2n_3 / s_3$ = 6.868931491

03. Cosine 7.5° = 0.9914448614* $4\sqrt{3}$ = 6.868931491

See the pages for sine 30º!

Value of polygon´s area through radius= $24n_3 / (4\sqrt{3})^2$ = 3.105828541

02. Sine 15° = 0.2588190451* 12= 3.105828541

Value of polygon´s perimeter through diameter= $24s_3 / 2(4\sqrt{3})$ = 3.132628613

03. Sine 7.5° = 0.1305261922* (48/2) = 3.132628613

The polygon's perimeter has a gap between the first polygon's side and the last polygon's side. Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms

Q: $24s_3 / 2^3(height_3)$ = 0.7899149855

Q: $24n_3 / (2(4\sqrt{3}))^2$ = 0.7764571353

4Q: $24s_3 / 2(4\sqrt{3})$ = 3.132628613

4Q: $24n_3 / (height_3)^2$ = 3.159659942

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_3)^2 = 24n_3 / 6.868931491^2$ = 3.159659942

Value of polygon´s perimeter $2(height_3) = 24s_3 / 2height_3$ = 3.159659942

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

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The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: : $(2height_3)* 4= (2* 6.868931491)* 4= 53.495145193$

Area of polygon´s smallest diagonal: $(2height_3)^2 = (2* 6.868931491)^2 = 188.7288793$

Polygon perimeter equal square perimeter= $24s_3 = 43.40697536$ as inner polygon

Side of primeter is: $24s_3 / 4= 10.85174384$

As we continue down the steps the gap will get bigger and bigger.

Step 4 Radius = $4\sqrt{3}$ angle = 60º

$S_3 / 2= c$ c = 0.9043119866 adjacent side

$h = r- h_3= a$ a = 0.0592717391 opposite side

$s_4 = \sqrt{a^2 + c^2} = 0.9062523424$ Hypotenuse

Area: $m = a * c / 2= 0.0268000721$

Area: $n_3 / 2= n = 3.105828541$

Area: $(m+ n) = n_4 = 3.132628613$

Area = $n_4 * 48= 150.3661734$

Perimeter = $s_4 * 48= 43.50011244$

¼ perimeter = $s_4 * 12= 10.87502811$

$Height_4 = 2n_4 / s_4 = 6.913369415$

Polygon´s smallest distance between the opposite sides: $2height_4 = 2* 6.913369415=$ 13.82673883

You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle.

See the pages for cosine 30º!

$Height_4 = 2n_4 / s_4 = 6.913369415$

04. Cosine 3.75° = $0.9978589232* 4\sqrt{3} = 6.868931491$

See the pages for sine 30º!

Value of polygon´s area through radius = $48n_4 / (4\sqrt{3})^2 =$ 3.132628613

02. Sine 7.5° = 0.2588190451* 24= 3.132628613

Value of polygon´s perimeter through diameter = $48s_4 / 2(4\sqrt{3}) = 3.139350203$

03. Sine 3.75° = 0.1305261922* (48/2) = 3.139350203 Q: $48s_4 / 2^3(height_4) = 0.7865215538$

The polygon's perimeter has a gap between the first polygon's side and the last polygon's side. Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

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Values in different forms:

Q: $48s_4 / 2^3(height_4) = 0.7865215538$

Q: $48n_4 / (2(4\sqrt{3}))^2 = 0.7831571533$

4Q: $48s_4 / 2(4\sqrt{3}) = 3.139350203$

4Q: $48n_4 / (height_4)^2 = 3.146086215$

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below

Value of polygon´s area $(height_4)^2 = 48n_4 / 6.868931491^2 = 3.159659942$

Value of polygon´s perimeter $2(height_4) = 48s_4 / 2height_4 = 3.159659942$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2height_4)* 4= 54.95145193$

Area of polygon´s smallest diagonal: $(2height_4)^2 = (2* 6.868931491)^2 = 188.7288793$

Polygon perimeter equal square perimeter= $48s_4 = 43.40697536$ as inner polygon

Side of primeter is: $48s_4 / 4= 10.85174384$

As we continue down the steps the gap will get bigger and bigger.

Step 5	Radius $= 4\sqrt{3}$	agnle = 60º
$S_4 / 2= c$	c = 0.4531261712	adjacent side
$h = r- h_4 = a$	a = 0.0148338149	opposite side
$s_5 = \sqrt{a^2 + c^2} = 0.4533689106$		Hypotenuse

Area: $m = a * c / 2= 0.0033607949$

Area: $n_4 / 2= n = 1.566314307$

Area: $(m+ n) = n_5 = 1.569675102$

Area= $n_5 * 96= 150.6888097$

Perimeter= $s_5 * 48= 43.52341542$

¼ perimeter = $s_5 * 24= 10.88085385$

$Height_5 = 2n_5 / s_5 = 6.924493784$

Polygon´s smallest distance between the opposite sides: $2height_5 = 2* 6.924493784= 13.84898757$

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You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle.

See the pages for cosine 30º!

$Height_5 = 2n_5 / s_5 = 6.924493784$

05. Cosine 1.875° = 0.9994645875* $4\sqrt{3}$ = 6.924493784

See the pages for sine 30º!

Value of polygon´s area through radius = $96n_5 / (4\sqrt{3})^2 = 3.139350203$

04. Sine 3.75° = 0.0654031292* (96/2)= 3.139350203

Value of polygon´s perimeter through diameter = $96s_5 / 2(4\sqrt{3}) = 3.141031951$

05. Sine 1.875° = 0.0327190828* (192/2)= 3.141031951

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $96s_5 / 2^3(height_5) = 0.7856786499$

Q: $96n_5 / (2(4\sqrt{3}))^2 = 0.7848375508$

4Q: $96s_5 / 2(4\sqrt{3}) = 3.141031951$

4Q: $96n_5 / (height_5)^2 = 3.1427146$

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_5)^2 = 96n_5 / 6.924493784^2 = 3.1427146$

Value of polygon´s perimeter $2(height_5) = 96s_5 / 2height_5 = 3.1427146$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2height_5)* 4= 55.39595027$

Area of polygon´s smallest diagonal: $(2height_5)^2 = (2* 6.924493784)^2 = 191.7944566$

Polygon perimeter equal square perimeter= $96s_5 = 43.52341542$ as inner polygon

Side of primeter is: $96s_5 / 4= 10.88085385$

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As we continue down the steps the gap will get bigger and bigger.

Step 6 Radius = $4\sqrt{3}$ angle = 60º

$S_5 / 2 = c$ c = 0.2266844553 adjacent side

$h = r - h_5 = a$ a = 0.0037094468 opposite side

$s_6 = \sqrt{a^2 + c^2} = 0.2267148038$ Hypotenuse

Area: $m = a * c / 2 = 4.204369609_E -4$

Area: $n_5 / 2 = n = 0.7848375508$

Area: $(m + n) = n_6 = 0.7852579877$

Area= $n_6 * 192 = 150.7695336$

Perimeter= $s_6 * 192 = 43.52924233$

¼ perimeter = $s_6 * 48 = 10.88231058$

$Height_6 = 2n_6 / s_6 = 6.927275807$

Polygon´s smallest distance between the opposite sides: $2height_6 = 2 * 6.927275807 =$ 13.85455161

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 30º!

$Height_6 = 2n_6 / s_6 = 6.927275807$

06. Cosine 0.9375° = 0.9998661379* $4\sqrt{3}$ = 6.927275807

See the pages for sine 30º!

Value of polygon´s area through radius = $192n_6 / (4\sqrt{3})^2 = 3.141031951$

05. Sine 1.875° = 0.0327190828* (192/2) = 3.141031951

Value of polygon´s perimeter through diameter= $192s_6 / 2(4\sqrt{3}) = 3.141452472$

06. Sine 0.9375° = 0.0163617316* (384/2) = 3.141452472

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms

Q: $192s_6 / 2^3(height_6) = 0.7854682625$

Q: $192n_6 / (2(4\sqrt{3}))^2 = 0.7852579877$

4Q: $192s_6 / 2(4\sqrt{3}) = 3.141452472$

4Q: $192n_6 / (height_6)^2 = 3.14187305$

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_6)^2 = 192n_6 / 6.927275807^2 = 3.14187305$

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Value of polygon´s perimeter $2(height_6) = 192s_6 / 2height_6 = 3.14187305$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2height_6)* 4= 55.41820645$

Area of polygon´s smallest diagonal: $(2height_6)^2 = (2* 6.927275807)^2 = 191.9486004$

Polygon perimeter equal square perimeter= $192s_6 = 43.52924233$ as inner polygon

Side of primeter is: $192s_6 / 4= 10.88231058$

As we continue down the steps the gap will get bigger and bigger.

Step 7	Radius = $4\sqrt{3}$	angle = 60º
$S_6 / 2= c$	c = 0.1133574019	adjacent side
$h = r- h_6 = a$	$a = 9.274237672_E-4$	opposite side
$s_7 = \sqrt{a^2 + c^2} = 0.1133611957$		Hypotenuse

Area: $m = a * c / 2= 5.256517436_E -5$

Area: $n_6 / 2= n = 0.3926289939$

Area: $(m+ n) = n_7 = 0.392681559$

Area= $n_7 * 384= 150.7897187$

Perimeter= $s_7 * 384= 43.553069913$

¼ perimeter = $s_7 * 96= 10.88267478$

$Height_7 = 2n_7 / s_7 = 6.92797137$

Polygon´s smallest distance between the opposite sides: $2height_7 = 2* 6.92797137= 13.85594274$

You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle.

See the pages for cosine 30º!

$Height_7 = 2n_7 / s_7 = 6.92797137$

07. Cosine 0.46875° = 0.9999665339* $4\sqrt{3} = 6.92797137$

See the pages for sine 30º!

Value of polygon´s area through radius = $384n_7 / (4\sqrt{3})^2 = 3.141452472$

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06. Sine 0.9375° = 0.0163617316* (384/2) = 3.141452472

Value of polygon´s perimeter through diameter = $384s_7 / 2(4\sqrt{3})$ = 3.141557608

07. Sine 0.46875° = 0.0081811396* (768/2) = 3.141557608

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms

Q: $384s_7 / 2^3(height_7)$ = 0.7854156868

Q: $384n_7 / (2(4\sqrt{3}))^2$ = 0.7853631181

4Q: $384s_7 / 2(4\sqrt{3})$ = 3.141557608

4Q: $384n_7 / (height_7)^2$ = 3.141662747

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_7)^2 = 384n_7 / 6.92797137^2$ = 3.141662747

Value of polygon´s perimeter $2(height_7) = 384s_7 / 2height_7$ = 3.141662747

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2height_7)$* 4= 55.42377096

Area of polygon´s smallest diagonal: $(2height_7)^2 = (2* 6.92797137)^2$ = 191.9871492

Polygon perimeter equal square perimeter= $384s_7$ = 43.53069913 as inner polygon

Side of primeter is: $384s_7$ / 4= 10.88267478

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As we continue down the steps the gap will get bigger and bigger.

Step 8 Radius = $4\sqrt{3}$ angle = 60º

$S_7 / 2 = c$ c = 0.0566805978 adjacent side

$h = r - h_7 = a$ $a = 2.318598217_E-4$ opposite side

$s_8 = \sqrt{a^2 + c^2} = 0.0566810721$ Hypotenuse

Area: $m = a * c / 2 = 6.570976654_E -6$

Area: $n_7 / 2 = n = 0.1963473505$

Area: $(m+ n) = n_8 = 0.1963473505$

Area= $n_8 * 768 = 150.7947652$

Perimeter= $s_8 * 768 = 43.53106334$

¼ perimeter = $s_8 * 192 = 10.88276583$

$Height_8 = 2n_8 / s_8 = 6.928145265$

Polygon´s smallest distance between the opposite sides: $2height_8 = 2* 6.928145265 =$ 13.85629053

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

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See the pages for cosine 30º!

$Height_8 = 2n_8 / s_8 = 6.928145265$

08. Cosine 0.234375° = 0.9999916334* $4\sqrt{3} = 6.928145265$

See the pages for sine 30º!

Value of polygon´s area through radius = $768n_8 / (4\sqrt{3})^2 = 3.141557608$

07. Sine 0.46875° = 0.0081811396* (768/2) = 3.141557608

Value of polygon´s perimeter through diameter = $768s_8 / 2(4\sqrt{3}) = 3.141583892$

08. Sine 0.234375° = 0.004090604* (1536/2) = 3.141583892

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $768s_8 / 2^3(height_8) = 0.7854025442$

Q: $768n_8 / (2(4\sqrt{3}))^2 = 0.785389402$

4Q: $768s_8 / 2(4\sqrt{3}) = 3.141583892$

4Q: $768n_8 / (height_8)^2 = 3.141610177$

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

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Value of polygon´s area $(height_8)^2 = 768n_8 / 6.928145265^2 = 3.141610177$

Value of polygon´s perimeter $2(height_8) = 768s_8 / 2height_8 = 3.141610177$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2height_8)* 4= 55.42516212$

Area of polygon´s smallest diagonal: $(2height_8)^2 = (2* 6.928145265)^2 = 191.9967873$

Polygon perimeter equal square perimeter= $768s_8 = 43.53106334$ as inner polygon

Side of primeter is: $768s_8 / 4= 10.88276583$

As we continue down the steps the gap will get bigger and bigger.

Step 9	Radius $= 4\sqrt{3}$	angle = 60º
$S_8 / 2= c$	c = 0.028340536	adjacent side
$h = r- h_8 = a$	$a = 5.79651981_E-5$	opposite side
$s_9 = \sqrt{a^2 + c^2} = 0.0283405953$		Hypotenuse

Area: $m = a * c / 2= 8.213823926_E -7$

Area: $n_8 / 2= n = 0.0981736752$

Area: $(m+ n) = n_9 = 0.0981744966$

Area= $n_9 * 1536= 150.7960268$

Perimeter= $s_9 * 1536= 43.53115439$

¼ perimeter = $s_9 * 384= 10.8827886$

$Height_9 = 2n_9 / s_9 = 6.928188739$

Polygon´s smallest distance between the opposite sides: $2height_9 = 2* 6.928188739=$ 13.85637748

You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle.

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See the pages for cosine 30º!

$Height_9 = 2n_9 / s_9 = 6.928188739$

09. Cosine 0.1171875° = 0.9999979084* $4\sqrt{3} = 6.928188739$

See the pages for sine 30º!

Value of polygon´s area through radius = $1536n_9 / (4\sqrt{3})^2 = 3.141583892$

08. Sine 0.234375° = 0.004090604* (1536/2) = 3.141583892

Value of polygon´s perimeter through diameter = $1536s_9 / 2(4\sqrt{3}) = 3.141590463$

09. Sine 0.1171875° = 0.0020453063* (3072/2) = 3.141590463

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $1536s_9 / 2^3(height_9) = 0.7853992586$

Q: $1536n_9 / (2(4\sqrt{3}))^2 = 0.785395973$

4Q: $1536s_9 / 2(4\sqrt{3}) = 3.141590463$

4Q: $1536n_9 / (height_9)^2 = 3.141597034$

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_9)^2 = 1536n_9 / 6.928188739^2 = 3.141597034$

Value of polygon´s perimeter $2(height_9) = 1536s_9 / 2height_9 = 3.141597034$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2height_9)* 4= 55.42550991$

Area of polygon´s smallest diagonal: $(2height_9)^2 = (2* 6.928188739)^2 = 191.9991968$

Polygon perimeter equal square perimeter= $1536s_9 = 43.53115439$ as inner polygon

Side of primeter is: $1536s_9 / 4= 10.8827886$

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As we continue down the steps the gap will get bigger and bigger.

Step 10 Radius = $4\sqrt{3}$ angle = 60º

$S_9 / 2 = c$ c = 0.0141702977 adjacent side

$h = r - h_9 = a$ $a = 1.44913145_E-5$ opposite side

$s_{10} = \sqrt{a^2 + c^2} = 0.0141703051$ Hypotenuse

Area: $m = a * c / 2 = 1.026731199_E -7$

Area: $n_9 / 2 = n = 0.0490872483$

Area: $(m + n) = n_{10} = 0.049087351$

Area= $n_{10} * 3072 = 150.7963422$

Perimeter= $s_{10} * 3072 = 43.53117715$

¼ perimeter = $s_{10} * 768 = 10.88279429$

$Height_{10} = 2n_{10} / s_{10} = 6.928199607$

Polygon´s smallest distance between the opposite sides: $2height_{10} = 2 * 6.928199607 =$ 13.85639921

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 30º!

$Height_{10} = 2n_{10} / s_{10} = 6.928199607$

10. Cosine 0.05859375° = 0.9999994771* $4\sqrt{3} = 6.928199607$

See the pages for sine 30º!

Value of polygon´s area through radius= $3072n_{10} / (4\sqrt{3})^2 = 3.141590463$

09. Sine 0.1171875° = 0.0020453063* (3072/2) = 3.141590463

Value of polygon´s perimeter through diameter= $3072s_{10} / 2(4\sqrt{3}) = 3.141592106$

10. Sine 0.05859375° = 0.0010226537* (6144/2) = 3.141592106

The polygon's perimeter has a gap between the first polygon's side and the last polygon's side. Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $3072s_{10} / 2^3(height_{10}) = 0.7853984372$

Q: $3072n_{10} / (2(4\sqrt{3}))^2 = 0.7853976158$

4Q: $3072s_{10} / 2(4\sqrt{3}) = 3.141592106$

4Q: $3072n_{10} / (height_{10})^2 = 3.141593749$

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It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_{10})^2 = 3072n_{10} / 6.928199607^2 = 3.141593749$

Value of polygon´s perimeter $2(height_{10}) = 3072s_{10} / 2height_{10} = 3.141593749$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2height_{10})* 4= 55.42559686$

Area of polygon´s smallest diagonal: $(2height_{10})^2 = (2* 6.928199607)^2 = 191.9997992$

Polygon perimeter equal square perimeter= $3072s_{10} = 43.5311715$ as inner polygon

Side of primeter is: $3072s_{10} / 4= 10.88279429$

As we continue down the steps the gap will get bigger and bigger.

Step 11	Radius = $4\sqrt{3}$	angle = 60º
$S_{10} / 2= c$	c = 0.0070851525	adjacent side
$h = r- h_{10} = a$	$a = 3.6228297_E-6$	opposite side
$s_{11} = \sqrt{a^2 + c^2} = 0.0070851535$		Hypotenuse

Area: $m = a * c / 2= 1.283415051_E -8$

Area: $n_{10} / 2= n = 0.0245436755$

Area: $(m+ n) = n_{11} = 0.0245436883$

Area= $n_{11} * 6144= 150.7964211$

Perimeter= $s_{11} * 6144= 43.53118284$

¼ perimeter = $s_{11}* 1536= 10.88279571$

$Height_{11} = 2n_{11} / s_{11} = 6.928202325$

Polygon´s smallest distance between the opposite sides: $2height_{11} = 2* 6.928202325= 13.85640465$

You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle.

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See the pages for cosine 30º!

$Height_{11} = 2n_{10} / s_{11} = 6.928202325$

11. Cosine 0.029296875° = 0.9999998693* $4\sqrt{3} = 6.928202325$

See the pages for sine 30º!

Value of polygon´s area through radius = $6144n_{11} / (4\sqrt{3})^2 = 3.141592106$

10. Sine 0.05859375° = 0.0010226537* (6144/2) = 3.141592106

Value of polygon´s perimeter through diameter = $6144s_{11} / 2(4\sqrt{3}) = 3.141592517$

11. Sine 0.029296875° = 0.000511326907* (12288/2) = 3.141592517

The polygon's perimeter has a gap between the first polygon's side and the last polygon's side. Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $6144s_{11} / 2^3(height_{11}) = 0.7853982318$

Q: $6144n_{11} / (2(4\sqrt{3}))^2 = 0.7853980265$

4Q: $6144s_{11} / 2(4\sqrt{3}) = 3.141592517$

4Q: $6144n_{11} / (height_{11})^2 = 3.141592927$

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_{11})^2 = 6144n_{11} / 6.928202325^2 = 3.141592927$

Value of polygon´s perimeter $2(height_{11}) = 6144s_{11} / 2height_{11} = 3.141592927$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they do not produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one.

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2height_{11})* 4= 55.42559686$

Area of polygon´s smallest diagonal: $(2height_{11})^2 = (2*6.928202325)^2 = 191.9999498$

Polygon perimeter equal square perimeter= $6144s_{11} = 43.53118284$ as inner polygon

Side of primeter is: $6144s_{11} / 4= 10.88279571$

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As we continue down the steps the gap will get bigger and bigger.

Step 12 Radius = $4\sqrt{3}$ angle = 60º

$S_{11} / 2 = c$ c = 0.0035425767 adjacent side

$h = r - h_{11} = a$ $a = 9.057074_E-7$ opposite side

$s_{12} = \sqrt{a^2 + c^2} = 0.0035425768$ Hypotenuse

Area: $m = a * c / 2 = 1.604268979_E -9$

Area: $n_{12} / 2 = n = 0.0122718442$

Area: $(m+ n) = n_{12} = 0.0122718458$

Area= $n_{12} * 12288 = 150.7964408$

Perimeter= $s_{12} * 12288 = 43.53118427$

¼ perimeter = $s_{12} * 3072 = 10.88279607$

$Height_{12} = 2n_{12} / s_{12} = 6.928203004$

Polygon´s smallest distance between the opposite sides: $2height_{12} = 2* 6.928203004 =$ 13.85640601

You need a value to calculate the polygon because its 2height is shorter than the circle diameter.

Note that this is a polygon, not a circle.

See the pages for cosine 30º!

$Height_{12} = 2n_{12} / s_{12} = 6.928203004$

12. Cosine 0.0146484375° = 0.9999999673* $4\sqrt{3} = 6.928203004$

See the pages for sine 30º!

Value of polygon´s area through radius= $12288n_{12} / (4\sqrt{3})^2 = 3.141592517$

11. Sine 0.029296875° = 0.000511326907* (12288/2) = 3.141592517

Value of polygon´s perimeter through diameter= $12288s_{12} / 2(4\sqrt{3}) = 3.141592619$

12. Sine 0.0146484375° = 0.0002556634619* (24576/2) = 3.141592619

The polygon's perimeter has a gap between the first polygon's side and the last polygon's side.

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

Values in different forms:

Q: $12288s_{12} / 2^3(height_{12}) = 0.7853981805$

Q: $12288n_{12} / ((2 * 4\sqrt{3}))^2 = 0.7853981292$

4Q: $12288s_{12} / 2(4\sqrt{3}) = 3.141592619$

4Q: $12288n_{12} / (height_{12})^2 = 3.141592722$

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It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_{12})^2 = 12288n_{12} / 6.928203004^2 = 3.141592722$

Value of polygon´s perimeter $2(height_{12}) = 12288s_{12} / 2height_{12} = 3.141592722$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2height_{12})* 4= 55.42562403$

Area of polygon´s smallest diagonal: $(2height_{12})^2 = (2*6.928203004)^2 = 191.9999875$

Polygon perimeter equal square perimeter= $12288s_{12} = 43.53118427$ as inner polygon

Side of primeter is: $12288s_{12} / 4= 10.88279607$

As we continue down the steps the gap will get bigger and bigger.

Step 13	Radius $= 4\sqrt{3}$	angle = 60º
$S_{12} / 2= c$	c = 0.0017712884	adjacent side
$h = r- h_{12} = a$	$a = 2.26427_E-7$	opposite side
$s_{13} = \sqrt{a^2 + c^2} = 0.0017712884... - ...$		Hypotenuse

Area: $m = a * c / 2= 2.00533762_E -10$

Area: $n_{12} / 2= n = 0.0061359229$

Area: $(m+ n) = n_{13} = 0.0061359231$

Area= $n_{13} * 24576= 150.7964457$

Perimeter= $s_{13} * 24576= 43.53118462$

¼ perimeter = $s_{13} * 3072= 10.88279616$

$Height_{13} = 2n_{13} / s_{13} = 6.928203174$

Polygon´s smallest distance between the opposite sides: $2height_{13} = 2* 6.928203174=$ 13.85640635

You need a value to calculate the polygon because its 2height is shorter than the circle diameter. Note that this is a polygon, not a circle.

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See the pages for cosine 30º!

$Height_{13} = 2n_{13} / s_{13} = 6.928203174$

13. Cosine 0.0073242188° = 0.9999999918* $4\sqrt{3} = 6.928203174$

See the pages for sine 30º!

Value of polygon´s area through radius= $24576n_{13} / (4\sqrt{3})^2 = 3.141592619$

12. Sine 0.0146484375° = 0.0002556634619* (24576/2) = 3.141592619

Value of polygon´s perimeter through diameter = $12288s_{13} / 2(4\sqrt{3}) = 3.141592645$

13. Sine 0.0073242188° = 0.000127831732* (49152/2) = 3.141592645

The polygon's perimeter has a gap between the first polygon's side and the last polygon's side.

Due to this gap we can not call it a polygon, but just to clarify we call it an imaginary polygon.

What is the angle when pi has million or billion decimals?

Values in different forms:

Q: $24576s_{13} / 2^3(height_{13}) = 0.7853981677$

Q: $24576n_{13} / (2 * 4\sqrt{3})^2 = 0.7853981548$

4Q: $24576s_{13} / 2(4\sqrt{3}) = 3.141592645$

4Q: $24576n_{13} / (height_{13})^2 = 3.141592671$

It is possible to think of a polygon´s perimeter as a square's primeter, then one obtains the value below.

Value of polygon´s area $(height_{13})^2 = 24576n_{13} / 6.928203174^2 = 3.141592671$

Value of polygon´s perimeter $2(height_{13}) = 24576s_{13} / 2height_{13} = 3.141592671$

Think of the polygon as a square, for further explanation see the book.

Note the area and primeter is not same and they don´t produce the same number for the squares side. The square is a outer square and the polygon is a inner polygon. Observe the squares grading-system 1, group one!

The primeter of the polygon and and its diagonal is known. If we make the diagonal the same as the side for a square, the polygon would be a inner polygon and the square would be a outer square in relation to each other: $(2height_{13})* 4= 55.42562539$

Area of polygon´s smallest diagonal: $(2height_{13})^2 = (2*6.928203174)^2 = 191.9999969$

Polygon perimeter equal square perimeter= $24576s_{13} = 43.53118462$ as inner polygon

Side of primeter is: $24576s_{13} / 4= 10.88279616$

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