



# Important Formulas of Hendecagon

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#### List of 30 Important Formulas of Hendecagon

### Important Formulas of Hendecagon 🗷

#### 1) Area of Hendecagon 🖸

 $\mathbf{A} = \frac{11}{4} \cdot \frac{\mathrm{S}^2}{\mathrm{tan}\left(\frac{\pi}{11}\right)}$ 

Open Calculator 🗗

ex 
$$234.141 \mathrm{m}^2 = rac{11}{4} \cdot rac{(5\mathrm{m})^2}{ an(rac{\pi}{11})}$$

#### 2) Area of Hendecagon given Height 🗹

 $\mathbf{K} = 11 \cdot rac{\left( \mathbf{h} \cdot an \left( rac{\pi}{22} 
ight) 
ight)^2}{ an \left( rac{\pi}{11} 
ight)}$ 

Open Calculator

ex 
$$223.8113 ext{m}^2=11\cdotrac{\left(17 ext{m}\cdot an\left(rac{\pi}{22}
ight)
ight)^2}{ an\left(rac{\pi}{11}
ight)}$$

#### 3) Area of Hendecagon given Perimeter

$$\mathbf{A} = rac{\mathrm{P}^2}{44 \cdot an \left(rac{\pi}{11}
ight)}$$

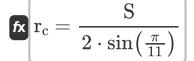
Open Calculator

$$extbf{ex} 234.141 ext{m}^2 = rac{(55 ext{m})^2}{44 \cdot an \left(rac{\pi}{11}
ight)}$$





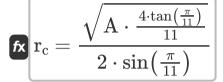
#### 4) Circumradius of Hendecagon 🛂



Open Calculator

$$\boxed{8.873664\mathrm{m} = \frac{5\mathrm{m}}{2 \cdot \sin\left(\frac{\pi}{11}\right)}}$$

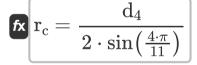
#### 5) Circumradius of Hendecagon given Area



Open Calculator

$$= \frac{\sqrt{235 \mathrm{m}^2 \cdot \frac{4 \cdot \mathrm{tan}\left(\frac{\pi}{11}\right)}{11}}}{2 \cdot \mathrm{sin}\left(\frac{\pi}{11}\right)}$$

#### 6) Circumradius of Hendecagon given Diagonal across Four Sides



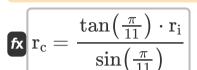


#### 7) Circumradius of Hendecagon given Diagonal across Two Sides



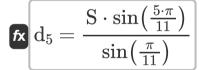
fx 
$$m r_c = rac{d_2}{2 \cdot \sin \left(rac{2 \cdot \pi}{11}
ight)}$$

#### 8) Circumradius of Hendecagon given Inradius 🗗



$$8.337737 \text{m} = \frac{\tan(\frac{\pi}{11}) \cdot 8 \text{m}}{\sin(\frac{\pi}{11})}$$

#### 9) Diagonal of Hendecagon across Five Sides



$$\boxed{ 17.56669 \text{m} = \frac{5 \text{m} \cdot \sin\left(\frac{5 \cdot \pi}{11}\right)}{\sin\left(\frac{\pi}{11}\right)} }$$



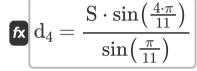
### 10) Diagonal of Hendecagon across Five Sides given Diagonal across Two Sides

 $\mathrm{d}_5 = \mathrm{d}_2 \cdot rac{\sin\left(rac{5 \cdot \pi}{11}
ight)}{\sin\left(rac{2 \cdot \pi}{11}
ight)}$ 

Open Calculator

ex  $18.3083 \mathrm{m} = 10 \mathrm{m} \cdot rac{\sin\left(rac{5 \cdot \pi}{11}
ight)}{\sin\left(rac{2 \cdot \pi}{11}
ight)}$ 

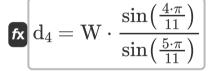
#### 11) Diagonal of Hendecagon across Four Sides



Open Calculator

ex 16.14354m  $= \frac{5m \cdot \sin(\frac{4 \cdot \pi}{11})}{\sin(\frac{\pi}{11})}$ 

#### 12) Diagonal of Hendecagon across Four Sides given Width



Open Calculator 🗗

ex 16.54175m = 18m  $\cdot \frac{\sin(\frac{4 \cdot \pi}{11})}{\sin(\frac{5 \cdot \pi}{11})}$ 



#### 13) Diagonal of Hendecagon across Three Sides 🚰

 $\left| \mathrm{d}_3 = rac{\mathrm{S} \cdot \sin \left( rac{3 \cdot \pi}{11} 
ight)}{\sin \left( rac{\pi}{11} 
ight)} 
ight|$ 

Open Calculator

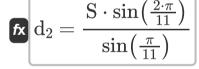
ex 13.41254m  $= \frac{5m \cdot \sin(\frac{3 \cdot \pi}{11})}{\sin(\frac{\pi}{11})}$ 

#### 14) Diagonal of Hendecagon across Three Sides given Circumradius



Open Calculator

#### 15) Diagonal of Hendecagon across Two Sides



Open Calculator

 $9.59493m = \frac{5m \cdot \sin(\frac{2 \cdot \pi}{11})}{\sin(\frac{\pi}{11})}$ 

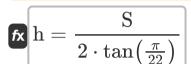


#### 16) Diagonal of Hendecagon across Two Sides given Inradius 🗗

$$ag{d}_2 = 2 \cdot an\!\left(rac{\pi}{11}
ight) \cdot r_{
m i} \cdot rac{\sin\!\left(rac{2 \cdot \pi}{11}
ight)}{\sin\!\left(rac{\pi}{11}
ight)}$$

Open Calculator 2

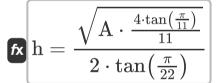
#### 17) Height of Hendecagon



Open Calculator 2

$$\boxed{17.38788\mathrm{m} = \frac{5\mathrm{m}}{2 \cdot \tan\left(\frac{\pi}{22}\right)}}$$

#### 18) Height of Hendecagon given Area 🗲



Open Calculator

$$= \frac{\sqrt{235 \mathrm{m}^2 \cdot \frac{4 \cdot \mathrm{tan}\left(\frac{\pi}{11}\right)}{11}}}{2 \cdot \mathrm{tan}\left(\frac{\pi}{22}\right)}$$



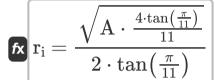
#### 19) Inradius of Hendecagon 🚰

fx 
$$_{i} = rac{\mathrm{S}}{2 \cdot an(rac{\pi}{11})}$$

Open Calculator 🗗

$$\boxed{\textbf{ex}} 8.514218 \text{m} = \frac{5 \text{m}}{2 \cdot \tan\left(\frac{\pi}{11}\right)}$$

#### 20) Inradius of Hendecagon given Area



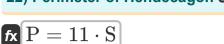
Open Calculator 🗗

#### 21) Inradius of Hendecagon given Width 🗗

$$\mathbf{f}_{\mathbf{x}} \mathbf{r}_{\mathrm{i}} = rac{\left(rac{\mathrm{W} \cdot \sin\left(rac{\pi}{11}
ight)}{\sin\left(rac{5 \cdot \pi}{11}
ight)}
ight)}{2 \cdot an\left(rac{\pi}{11}
ight)}$$

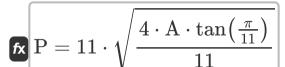


#### 22) Perimeter of Hendecagon



Open Calculator 🚰

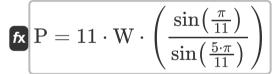
#### 23) Perimeter of Hendecagon given Area 🛂



Open Calculator

 $= 11 \cdot \sqrt{\frac{4 \cdot 235 \text{m}^2 \cdot an\left(\frac{\pi}{11}\right)}{11}}$ 

#### 24) Perimeter of Hendecagon given Width



Open Calculator

ex  $56.35668 ext{m} = 11 \cdot 18 ext{m} \cdot \left( \frac{\sin\left(\frac{\pi}{11}\right)}{\sin\left(\frac{5 \cdot \pi}{11}\right)} \right)$ 



Open Calculator

## 25) Side of Hendecagon 🖸

 $\left|\mathbf{S}\right| = \sqrt{rac{4 \cdot \mathbf{A} \cdot an\left(rac{\pi}{11}
ight)}{11}}$ 

 $= \sqrt{ \frac{4 \cdot 235 \text{m}^2 \cdot an(\frac{\pi}{11})}{11} }$ 

### 26) Side of Hendecagon given Circumradius 🗗

 $\left|\mathbf{S} = 2 \cdot \mathbf{r}_{ ext{c}} \cdot \sin\!\left(rac{\pi}{11}
ight)
ight|$ 

Open Calculator

Open Calculator G

Open Calculator

27) Side of Hendecagon given Height 🗹

28) Width of Hendecagon

 $\left|\mathbf{K}\right| \mathbf{S} = 2 \cdot \mathbf{h} \cdot an\left(rac{\pi}{22}
ight) \left|\mathbf{K}\right|$ 

 $\mathbf{W} = rac{\mathbf{S} \cdot \sin\left(rac{3\cdot \pi}{11}
ight)}{\sin\left(rac{\pi}{11}
ight)}$ 









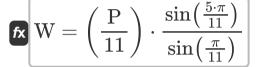
#### 29) Width of Hendecagon given Area

 $\mathbf{W} = 2 \cdot \sqrt{\mathbf{A} \cdot \frac{ an(rac{\pi}{11})}{11}} \cdot rac{\sin(rac{5 \cdot \pi}{11})}{\sin(rac{\pi}{11})}$ 

Open Calculator

 $\boxed{\textbf{ex}} 17.59888 \text{m} = 2 \cdot \sqrt{235 \text{m}^2 \cdot \frac{\tan\left(\frac{\pi}{11}\right)}{11}} \cdot \frac{\sin\left(\frac{5 \cdot \pi}{11}\right)}{\sin\left(\frac{\pi}{11}\right)}$ 

#### 30) Width of Hendecagon given Perimeter



Open Calculator

ex 
$$17.56669 \text{m} = \left(\frac{55 \text{m}}{11}\right) \cdot \frac{\sin\left(\frac{5 \cdot \pi}{11}\right)}{\sin\left(\frac{\pi}{11}\right)}$$



#### Variables Used

- A Area of Hendecagon (Square Meter)
- d<sub>2</sub> Diagonal across Two Sides of Hendecagon (Meter)
- d<sub>3</sub> Diagonal across Three Sides of Hendecagon (Meter)
- d<sub>4</sub> Diagonal across Four Sides of Hendecagon (Meter)
- d<sub>5</sub> Diagonal across Five Sides of Hendecagon (Meter)
- **h** Height of Hendecagon (Meter)
- P Perimeter of Hendecagon (Meter)
- r<sub>c</sub> Circumradius of Hendecagon (Meter)
- **r**<sub>i</sub> Inradius of Hendecagon (Meter)
- S Side of Hendecagon (Meter)
- W Width of hendecagon (Meter)





#### Constants, Functions, Measurements used

- Constant: pi, 3.14159265358979323846264338327950288
   Archimedes' constant
- Function: sin, sin(Angle)

  Sine is a trigonometric function that describes the ratio of the length of the opposite side of a right triangle to the length of the hypotenuse.
- Function: sqrt, sqrt(Number)

  A square root function is a function that takes a non-negative number as an input and returns the square root of the given input number.
- Function: tan, tan(Angle)
   The tangent of an angle is a trigonometric ratio of the length of the side opposite an angle to the length of the side adjacent to an angle in a right triangle.
- Measurement: Length in Meter (m)
   Length Unit Conversion
- Measurement: Area in Square Meter (m²)
   Area Unit Conversion





#### **Check other formula lists**

- Annulus Formulas
- Antiparallelogram Formulas
- Arrow Hexagon Formulas
- Astroid Formulas
- Bulge Formulas
- Cardioid Formulas
- Circular Arc Quadrangle
   Formulas
- Concave Pentagon Formulas
- Concave Regular Hexagon Formulas
- Concave Regular Pentagon
   Formulas
- Crossed Rectangle Formulas
- Cut Rectangle Formulas
- Cyclic Quadrilateral Formulas
- Cycloid Formulas
- Decagon Formulas
- Dodecagon Formulas 🖒
- Double Cycloid Formulas
- Fourstar Formulas
- Frame Formulas
- Golden Rectangle Formulas
- Grid Formulas
- H Shape Formulas
- Half Yin-Yang Formulas
- Heart Shape Formulas

- Hendecagon Formulas
- Heptagon Formulas 🗗
- Hexadecagon Formulas
- Hexagon Formulas
- Hexagram Formulas 🖒
- House Shape Formulas
- Hyperbola Formulas 🗗
- Hypocycloid Formulas
- Isosceles Trapezoid Formulas
- L Shape Formulas
- Line Formulas
- N-gon Formulas
- Nonagon Formulas
- Octagon Formulas
- Octagram Formulas
- Open Frame Formulas
- Parallelogram Formulas
- Pentagon Formulas
- Pentagram Formulas
- Polygram Formulas
- Quadrilateral Formulas
- Quarter Circle Formulas
- Rectangle Formulas
- Rectangular Hexagon Formulas
- Regular Polygon Formulas
- Reuleaux Triangle Formulas





- Rhombus Formulas
- Right Trapezoid Formulas
- Round Corner Formulas
- Salinon Formulas
- Semicircle Formulas
- Sharp Kink Formulas
- Square Formulas
- Star of Lakshmi Formulas

- T Shape Formulas
- Tangential Quadrilateral Formulas
- Trapezoid Formulas
- Tri-equilateral Trapezoid
   Formulas
- Truncated Square Formulas
- Unicursal Hexagram Formulas
- X Shape Formulas

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