

Important Formulas of Hendecagon PDF



Formulas Examples with Units

List of 30 Important Formulas of Hendecagon

1) Area of Hendecagon Formula ↻

Formula

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

Example with Units

$$234.141 \text{ m}^2 = \frac{11}{4} \cdot \frac{5 \text{ m}^2}{\tan\left(\frac{3.1416}{11}\right)}$$

Evaluate Formula ↻

2) Area of Hendecagon given Height Formula ↻

Formula

$$A = 11 \cdot \frac{\left(h \cdot \tan\left(\frac{\pi}{22}\right)\right)^2}{\tan\left(\frac{\pi}{11}\right)}$$

Example with Units

$$223.8113 \text{ m}^2 = 11 \cdot \frac{\left(17 \text{ m} \cdot \tan\left(\frac{3.1416}{22}\right)\right)^2}{\tan\left(\frac{3.1416}{11}\right)}$$

Evaluate Formula ↻

3) Area of Hendecagon given Perimeter Formula ↻

Formula

$$A = \frac{P^2}{44 \cdot \tan\left(\frac{\pi}{11}\right)}$$

Example with Units

$$234.141 \text{ m}^2 = \frac{55 \text{ m}^2}{44 \cdot \tan\left(\frac{3.1416}{11}\right)}$$

Evaluate Formula ↻

4) Circumradius of Hendecagon Formula ↻

Formula

$$r_c = \frac{S}{2 \cdot \sin\left(\frac{\pi}{11}\right)}$$

Example with Units

$$8.8737 \text{ m} = \frac{5 \text{ m}}{2 \cdot \sin\left(\frac{3.1416}{11}\right)}$$

Evaluate Formula ↻

5) Circumradius of Hendecagon given Area Formula ↻

Formula

$$r_c = \sqrt{\frac{A \cdot \frac{4 \cdot \tan\left(\frac{\pi}{11}\right)}{11}}{2 \cdot \sin\left(\frac{\pi}{11}\right)}}$$

Example with Units

$$8.8899 \text{ m} = \sqrt{\frac{235 \text{ m}^2 \cdot \frac{4 \cdot \tan\left(\frac{3.1416}{11}\right)}{11}}{2 \cdot \sin\left(\frac{3.1416}{11}\right)}}$$

Evaluate Formula ↻



6) Circumradius of Hendecagon given Diagonal across Four Sides Formula

Formula

$$r_c = \frac{d_4}{2 \cdot \sin\left(\frac{4 \cdot \pi}{11}\right)}$$

Example with Units

$$8.7948_m = \frac{16_m}{2 \cdot \sin\left(\frac{4 \cdot 3.1416}{11}\right)}$$

Evaluate Formula 

7) Circumradius of Hendecagon given Diagonal across Two Sides Formula

Formula

$$r_c = \frac{d_2}{2 \cdot \sin\left(\frac{2 \cdot \pi}{11}\right)}$$

Example with Units

$$9.2483_m = \frac{10_m}{2 \cdot \sin\left(\frac{2 \cdot 3.1416}{11}\right)}$$

Evaluate Formula 

8) Circumradius of Hendecagon given Inradius Formula

Formula

$$r_c = \frac{\tan\left(\frac{\pi}{11}\right) \cdot r_i}{\sin\left(\frac{\pi}{11}\right)}$$

Example with Units

$$8.3377_m = \frac{\tan\left(\frac{3.1416}{11}\right) \cdot 8_m}{\sin\left(\frac{3.1416}{11}\right)}$$

Evaluate Formula 

9) Diagonal of Hendecagon across Five Sides Formula

Formula

$$d_5 = \frac{S \cdot \sin\left(\frac{5 \cdot \pi}{11}\right)}{\sin\left(\frac{\pi}{11}\right)}$$

Example with Units

$$17.5667_m = \frac{5_m \cdot \sin\left(\frac{5 \cdot 3.1416}{11}\right)}{\sin\left(\frac{3.1416}{11}\right)}$$

Evaluate Formula 

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

Formula

$$d_5 = d_2 \cdot \frac{\sin\left(\frac{5 \cdot \pi}{11}\right)}{\sin\left(\frac{2 \cdot \pi}{11}\right)}$$

Example with Units

$$18.3083_m = 10_m \cdot \frac{\sin\left(\frac{5 \cdot 3.1416}{11}\right)}{\sin\left(\frac{2 \cdot 3.1416}{11}\right)}$$

Evaluate Formula 

11) Diagonal of Hendecagon across Four Sides Formula

Formula

$$d_4 = \frac{S \cdot \sin\left(\frac{4 \cdot \pi}{11}\right)}{\sin\left(\frac{\pi}{11}\right)}$$

Example with Units

$$16.1435_m = \frac{5_m \cdot \sin\left(\frac{4 \cdot 3.1416}{11}\right)}{\sin\left(\frac{3.1416}{11}\right)}$$

Evaluate Formula 



12) Diagonal of Hendecagon across Four Sides given Width Formula

Formula

$$d_4 = W \cdot \frac{\sin\left(\frac{4 \cdot \pi}{11}\right)}{\sin\left(\frac{5 \cdot \pi}{11}\right)}$$

Example with Units

$$16.5417_{\text{m}} = 18_{\text{m}} \cdot \frac{\sin\left(\frac{4 \cdot 3.1416}{11}\right)}{\sin\left(\frac{5 \cdot 3.1416}{11}\right)}$$

Evaluate Formula 

13) Diagonal of Hendecagon across Three Sides Formula

Formula

$$d_3 = \frac{S \cdot \sin\left(\frac{3 \cdot \pi}{11}\right)}{\sin\left(\frac{\pi}{11}\right)}$$

Example with Units

$$13.4125_{\text{m}} = \frac{5_{\text{m}} \cdot \sin\left(\frac{3 \cdot 3.1416}{11}\right)}{\sin\left(\frac{3.1416}{11}\right)}$$

Evaluate Formula 

14) Diagonal of Hendecagon across Three Sides given Circumradius Formula

Formula

$$d_3 = 2 \cdot r_c \cdot \sin\left(\frac{3 \cdot \pi}{11}\right)$$

Example with Units

$$13.6035_{\text{m}} = 2 \cdot 9_{\text{m}} \cdot \sin\left(\frac{3 \cdot 3.1416}{11}\right)$$

Evaluate Formula 

15) Diagonal of Hendecagon across Two Sides Formula

Formula

$$d_2 = \frac{S \cdot \sin\left(\frac{2 \cdot \pi}{11}\right)}{\sin\left(\frac{\pi}{11}\right)}$$

Example with Units

$$9.5949_{\text{m}} = \frac{5_{\text{m}} \cdot \sin\left(\frac{2 \cdot 3.1416}{11}\right)}{\sin\left(\frac{3.1416}{11}\right)}$$

Evaluate Formula 

16) Diagonal of Hendecagon across Two Sides given Inradius Formula

Formula

$$d_2 = 2 \cdot \tan\left(\frac{\pi}{11}\right) \cdot r_i \cdot \frac{\sin\left(\frac{2 \cdot \pi}{11}\right)}{\sin\left(\frac{\pi}{11}\right)}$$

Example with Units

$$9.0154_{\text{m}} = 2 \cdot \tan\left(\frac{3.1416}{11}\right) \cdot 8_{\text{m}} \cdot \frac{\sin\left(\frac{2 \cdot 3.1416}{11}\right)}{\sin\left(\frac{3.1416}{11}\right)}$$

Evaluate Formula 

17) Height of Hendecagon Formula

Formula

$$h = \frac{S}{2 \cdot \tan\left(\frac{\pi}{22}\right)}$$

Example with Units

$$17.3879_{\text{m}} = \frac{5_{\text{m}}}{2 \cdot \tan\left(\frac{3.1416}{22}\right)}$$

Evaluate Formula 



18) Height of Hendecagon given Area Formula ↻

Formula

$$h = \frac{\sqrt{A \cdot \frac{4 \cdot \tan\left(\frac{\pi}{11}\right)}{11}}}{2 \cdot \tan\left(\frac{\pi}{22}\right)}$$

Example with Units

$$17.4197\text{ m} = \frac{\sqrt{235\text{ m}^2 \cdot \frac{4 \cdot \tan\left(\frac{3.1416}{11}\right)}{11}}}{2 \cdot \tan\left(\frac{3.1416}{22}\right)}$$

Evaluate Formula ↻

19) Inradius of Hendecagon Formula ↻

Formula

$$r_i = \frac{S}{2 \cdot \tan\left(\frac{\pi}{11}\right)}$$

Example with Units

$$8.5142\text{ m} = \frac{5\text{ m}}{2 \cdot \tan\left(\frac{3.1416}{11}\right)}$$

Evaluate Formula ↻

20) Inradius of Hendecagon given Area Formula ↻

Formula

$$r_i = \frac{\sqrt{A \cdot \frac{4 \cdot \tan\left(\frac{\pi}{11}\right)}{11}}}{2 \cdot \tan\left(\frac{\pi}{11}\right)}$$

Example with Units

$$8.5298\text{ m} = \frac{\sqrt{235\text{ m}^2 \cdot \frac{4 \cdot \tan\left(\frac{3.1416}{11}\right)}{11}}}{2 \cdot \tan\left(\frac{3.1416}{11}\right)}$$

Evaluate Formula ↻

21) Inradius of Hendecagon given Width Formula ↻

Formula

$$r_i = \frac{\left(\frac{W \cdot \sin\left(\frac{\pi}{11}\right)}{\sin\left(\frac{5 \cdot \pi}{11}\right)}\right)}{2 \cdot \tan\left(\frac{\pi}{11}\right)}$$

Example with Units

$$8.7242\text{ m} = \frac{\left(\frac{18\text{ m} \cdot \sin\left(\frac{3.1416}{11}\right)}{\sin\left(\frac{5 \cdot 3.1416}{11}\right)}\right)}{2 \cdot \tan\left(\frac{3.1416}{11}\right)}$$

Evaluate Formula ↻

22) Perimeter of Hendecagon Formula ↻

Formula

$$P = 11 \cdot S$$

Example with Units

$$55\text{ m} = 11 \cdot 5\text{ m}$$

Evaluate Formula ↻

23) Perimeter of Hendecagon given Area Formula ↻

Formula

$$P = 11 \cdot \sqrt{\frac{4 \cdot A \cdot \tan\left(\frac{\pi}{11}\right)}{11}}$$

Example with Units

$$55.1008\text{ m} = 11 \cdot \sqrt{\frac{4 \cdot 235\text{ m}^2 \cdot \tan\left(\frac{3.1416}{11}\right)}{11}}$$

Evaluate Formula ↻



24) Perimeter of Hendecagon given Width Formula

Formula

$$P = 11 \cdot W \cdot \left(\frac{\sin\left(\frac{\pi}{11}\right)}{\sin\left(\frac{5 \cdot \pi}{11}\right)} \right)$$

Example with Units

$$56.3567 \text{ m} = 11 \cdot 18 \text{ m} \cdot \left(\frac{\sin\left(\frac{3.1416}{11}\right)}{\sin\left(\frac{5 \cdot 3.1416}{11}\right)} \right)$$

Evaluate Formula 

25) Side of Hendecagon Formula

Formula

$$S = \sqrt{\frac{4 \cdot A \cdot \tan\left(\frac{\pi}{11}\right)}{11}}$$

Example with Units

$$5.0092 \text{ m} = \sqrt{\frac{4 \cdot 235 \text{ m}^2 \cdot \tan\left(\frac{3.1416}{11}\right)}{11}}$$

Evaluate Formula 

26) Side of Hendecagon given Circumradius Formula

Formula

$$S = 2 \cdot r_c \cdot \sin\left(\frac{\pi}{11}\right)$$

Example with Units

$$5.0712 \text{ m} = 2 \cdot 9 \text{ m} \cdot \sin\left(\frac{3.1416}{11}\right)$$

Evaluate Formula 

27) Side of Hendecagon given Height Formula

Formula

$$S = 2 \cdot h \cdot \tan\left(\frac{\pi}{22}\right)$$

Example with Units

$$4.8885 \text{ m} = 2 \cdot 17 \text{ m} \cdot \tan\left(\frac{3.1416}{22}\right)$$

Evaluate Formula 

28) Width of Hendecagon Formula

Formula

$$W = \frac{S \cdot \sin\left(\frac{5 \cdot \pi}{11}\right)}{\sin\left(\frac{\pi}{11}\right)}$$

Example with Units

$$17.5667 \text{ m} = \frac{5 \text{ m} \cdot \sin\left(\frac{5 \cdot 3.1416}{11}\right)}{\sin\left(\frac{3.1416}{11}\right)}$$

Evaluate Formula 

29) Width of Hendecagon given Area Formula

Formula

$$W = 2 \cdot \sqrt{A \cdot \frac{\tan\left(\frac{\pi}{11}\right)}{11} \cdot \frac{\sin\left(\frac{5 \cdot \pi}{11}\right)}{\sin\left(\frac{\pi}{11}\right)}}$$

Example with Units

$$17.5989 \text{ m} = 2 \cdot \sqrt{235 \text{ m}^2 \cdot \frac{\tan\left(\frac{3.1416}{11}\right)}{11} \cdot \frac{\sin\left(\frac{5 \cdot 3.1416}{11}\right)}{\sin\left(\frac{3.1416}{11}\right)}}$$

Evaluate Formula 



30) Width of Hendecagon given Perimeter Formula

Formula

$$W = \left(\frac{p}{11} \right) \cdot \frac{\sin\left(\frac{5 \cdot \pi}{11}\right)}{\sin\left(\frac{\pi}{11}\right)}$$

Example with Units

$$17.5667_{\text{m}} = \left(\frac{55_{\text{m}}}{11} \right) \cdot \frac{\sin\left(\frac{5 \cdot 3.1416}{11}\right)}{\sin\left(\frac{3.1416}{11}\right)}$$

Evaluate Formula 



Variables used in list of Important Formulas of Hendecagon above

- **A** Area of Hendecagon (Square Meter)
- **d₂** Diagonal across Two Sides of Hendecagon (Meter)
- **d₃** Diagonal across Three Sides of Hendecagon (Meter)
- **d₄** Diagonal across Four Sides of Hendecagon (Meter)
- **d₅** Diagonal across Five Sides of Hendecagon (Meter)
- **h** Height of Hendecagon (Meter)
- **P** Perimeter of Hendecagon (Meter)
- **r_c** Circumradius of Hendecagon (Meter)
- **r_i** Inradius of Hendecagon (Meter)
- **S** Side of Hendecagon (Meter)
- **W** Width of hendecagon (Meter)

Constants, Functions, Measurements used in list of Important Formulas of Hendecagon above

- **constant(s)**: π , 3.14159265358979323846264338327950288
Archimedes' constant
- **Functions**: **sin**, $\sin(\text{Angle})$
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.
- **Functions**: **sqrt**, $\sqrt{\text{Number}}$
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.
- **Functions**: **tan**, $\tan(\text{Angle})$
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 



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