



[calculatoratoz.com](http://calculatoratoz.com)



[unitsconverters.com](http://unitsconverters.com)

# Important Formulas of Rhombus

Calculators!

Examples!

Conversions!

Bookmark [calculatoratoz.com](http://calculatoratoz.com), [unitsconverters.com](http://unitsconverters.com)

Widest Coverage of Calculators and Growing - **30,000+ Calculators!**  
Calculate With a Different Unit for Each Variable - **In built Unit Conversion!**  
Widest Collection of Measurements and Units - **250+ Measurements!**

Feel free to SHARE this document with your friends!

[Please leave your feedback here...](#)



# List of 28 Important Formulas of Rhombus

## Important Formulas of Rhombus

### Angles of Rhombus

#### 1) Acute Angle of Rhombus given both Diagonals

$$\text{fx } \angle_{\text{Acute}} = a \sin \left( \frac{2 \cdot d_{\text{Long}} \cdot d_{\text{Short}}}{d_{\text{Long}}^2 + d_{\text{Short}}^2} \right)$$

Open Calculator 

$$\text{ex } 47.92498^\circ = a \sin \left( \frac{2 \cdot (18\text{m}) \cdot (8\text{m})}{(18\text{m})^2 + (8\text{m})^2} \right)$$

#### 2) Acute Angle of Rhombus given Long Diagonal

$$\text{fx } \angle_{\text{Acute}} = a \cos \left( \frac{d_{\text{Long}}^2}{2 \cdot S^2} - 1 \right)$$

Open Calculator 

$$\text{ex } 51.68387^\circ = a \cos \left( \frac{(18\text{m})^2}{2 \cdot (10\text{m})^2} - 1 \right)$$



### 3) Acute Angle of Rhombus given Short Diagonal

[Open Calculator !\[\]\(4729e517bc6a7cd81c8025b9646574fb\_img.jpg\)](#)

$$\text{fx } \angle_{\text{Acute}} = a \cos \left( 1 - \frac{d_{\text{Short}}^2}{2 \cdot S^2} \right)$$

$$\text{ex } 47.15636^\circ = a \cos \left( 1 - \frac{(8\text{m})^2}{2 \cdot (10\text{m})^2} \right)$$

### 4) Obtuse Angle of Rhombus given both Diagonals

[Open Calculator !\[\]\(e474458956c9a37fbf9586ddb60a7fa1\_img.jpg\)](#)

$$\text{fx } \angle_{\text{Obtuse}} = 2 \cdot a \cos \left( \frac{d_{\text{Short}}}{\sqrt{d_{\text{Long}}^2 + d_{\text{Short}}^2}} \right)$$

$$\text{ex } 132.075^\circ = 2 \cdot a \cos \left( \frac{8\text{m}}{\sqrt{(18\text{m})^2 + (8\text{m})^2}} \right)$$

## Area of Rhombus

### 5) Area of Rhombus

[Open Calculator !\[\]\(0d5ec72f61334709c3fc9450209b754f\_img.jpg\)](#)

$$\text{fx } A = S^2 \cdot \sin(\angle_{\text{Acute}})$$

$$\text{ex } 70.71068\text{m}^2 = (10\text{m})^2 \cdot \sin(45^\circ)$$



## 6) Area of Rhombus given Both Diagonals

$$\text{fx } A = \frac{d_{\text{Long}} \cdot d_{\text{Short}}}{2}$$

[Open Calculator !\[\]\(e78f798d4ea5c530c9db49e7d26e6b95\_img.jpg\)](#)

$$\text{ex } 72\text{m}^2 = \frac{18\text{m} \cdot 8\text{m}}{2}$$

## 7) Area of Rhombus given Height

$$\text{fx } A = S \cdot h$$

[Open Calculator !\[\]\(05be7c7a8995decd503647c99211f7c2\_img.jpg\)](#)

$$\text{ex } 70\text{m}^2 = 10\text{m} \cdot 7\text{m}$$

## 8) Area of Rhombus given Inradius

$$\text{fx } A = 2 \cdot S \cdot r_i$$

[Open Calculator !\[\]\(fe3aebe81acea8d45108cd2768939da7\_img.jpg\)](#)

$$\text{ex } 60\text{m}^2 = 2 \cdot 10\text{m} \cdot 3\text{m}$$

## Diagonal of Rhombus

### 9) Long Diagonal of Rhombus

$$\text{fx } d_{\text{Long}} = 2 \cdot S \cdot \cos\left(\frac{\angle_{\text{Acute}}}{2}\right)$$

[Open Calculator !\[\]\(c1168d6a8b365d11e842ece304635fa7\_img.jpg\)](#)

$$\text{ex } 18.47759\text{m} = 2 \cdot 10\text{m} \cdot \cos\left(\frac{45^\circ}{2}\right)$$



## 10) Long Diagonal of Rhombus given Area and Short Diagonal

$$\text{fx } d_{\text{Long}} = \frac{2 \cdot A}{d_{\text{Short}}}$$

[Open Calculator !\[\]\(e2376d476d06eb31946dc01a69a4403a\_img.jpg\)](#)

$$\text{ex } 17.5\text{m} = \frac{2 \cdot 70\text{m}^2}{8\text{m}}$$

## 11) Long Diagonal of Rhombus given Short Diagonal and Acute Angle

$$\text{fx } d_{\text{Long}} = \frac{d_{\text{Short}}}{\tan\left(\frac{\angle_{\text{Acute}}}{2}\right)}$$

[Open Calculator !\[\]\(0b5e7e25e8775f7e7e80906ada4f0021\_img.jpg\)](#)

$$\text{ex } 19.31371\text{m} = \frac{8\text{m}}{\tan\left(\frac{45^\circ}{2}\right)}$$

## 12) Long Diagonal of Rhombus given Short Diagonal and Side

$$\text{fx } d_{\text{Long}} = \sqrt{4 \cdot S^2 - d_{\text{Short}}^2}$$

[Open Calculator !\[\]\(bd3b31712ad9bab5a241210fa6925cdd\_img.jpg\)](#)

$$\text{ex } 18.3303\text{m} = \sqrt{4 \cdot (10\text{m})^2 - (8\text{m})^2}$$

## 13) Short Diagonal of Rhombus

$$\text{fx } d_{\text{Short}} = 2 \cdot S \cdot \sin\left(\frac{\angle_{\text{Acute}}}{2}\right)$$

[Open Calculator !\[\]\(7bc43b319a082987e20f7bf78f4bab80\_img.jpg\)](#)

$$\text{ex } 7.653669\text{m} = 2 \cdot 10\text{m} \cdot \sin\left(\frac{45^\circ}{2}\right)$$



## 14) Short Diagonal of Rhombus given Area and Long Diagonal

$$\text{fx } d_{\text{Short}} = \frac{2 \cdot A}{d_{\text{Long}}}$$

[Open Calculator !\[\]\(d3fb9f94af8b26d1c844efa9a98805b0\_img.jpg\)](#)

$$\text{ex } 7.777778\text{m} = \frac{2 \cdot 70\text{m}^2}{18\text{m}}$$

## 15) Short Diagonal of Rhombus given Long Diagonal and Acute Angle

$$\text{fx } d_{\text{Short}} = d_{\text{Long}} \cdot \tan\left(\frac{\angle_{\text{Acute}}}{2}\right)$$

[Open Calculator !\[\]\(e1d6102fe77919492c04879c8450f1f5\_img.jpg\)](#)

$$\text{ex } 7.455844\text{m} = 18\text{m} \cdot \tan\left(\frac{45^\circ}{2}\right)$$

## 16) Short Diagonal of Rhombus given Long Diagonal and Side

$$\text{fx } d_{\text{Short}} = \sqrt{4 \cdot S^2 - d_{\text{Long}}^2}$$

[Open Calculator !\[\]\(ab4e2b3fc7e7887b7a72f548aa6f5e60\_img.jpg\)](#)

$$\text{ex } 8.717798\text{m} = \sqrt{4 \cdot (10\text{m})^2 - (18\text{m})^2}$$

## Height of Rhombus


### 17) Height of Rhombus

$$\text{fx } h = S \cdot \sin(\angle_{\text{Acute}})$$

[Open Calculator !\[\]\(21226b58c700e5231ab98d27101bac58\_img.jpg\)](#)

$$\text{ex } 7.071068\text{m} = 10\text{m} \cdot \sin(45^\circ)$$




18) Height of Rhombus given Area 

$$fx \quad h = \frac{A}{S}$$

[Open Calculator !\[\]\(9dfdaff1d86ba3c1f8353b4d1b61b8c5\_img.jpg\)](#)

$$ex \quad 7m = \frac{70m^2}{10m}$$

19) Height of Rhombus given Inradius 

$$fx \quad h = 2 \cdot r_i$$

[Open Calculator !\[\]\(2b376d1a92330ab09dad2665d2f89bf5\_img.jpg\)](#)


$$ex \quad 6m = 2 \cdot 3m$$

Inradius of Rhombus 20) Inradius of Rhombus 

$$fx \quad r_i = \frac{S \cdot \sin(\angle_{Acute})}{2}$$

[Open Calculator !\[\]\(0d7ca0919e6c47bbd874bfa0189fe22e\_img.jpg\)](#)

$$ex \quad 3.535534m = \frac{10m \cdot \sin(45^\circ)}{2}$$


21) Inradius of Rhombus given Area and Side 

$$fx \quad r_i = \frac{A}{2 \cdot S}$$

[Open Calculator !\[\]\(683dba75afe26e28cd4de5730b776760\_img.jpg\)](#)

$$ex \quad 3.5m = \frac{70m^2}{2 \cdot 10m}$$



22) Inradius of Rhombus given both Diagonals 

$$\text{fx } r_i = \frac{d_{\text{Long}} \cdot d_{\text{Short}}}{2 \cdot \sqrt{d_{\text{Long}}^2 + d_{\text{Short}}^2}}$$

Open Calculator 

$$\text{ex } 3.655246\text{m} = \frac{(18\text{m}) \cdot (8\text{m})}{2 \cdot \sqrt{(18\text{m})^2 + (8\text{m})^2}}$$

23) Inradius of Rhombus given Height 

$$\text{fx } r_i = \frac{h}{2}$$

Open Calculator 

$$\text{ex } 3.5\text{m} = \frac{7\text{m}}{2}$$

24) Inradius of Rhombus given Long Diagonal and Side 


$$\text{fx } r_i = \frac{d_{\text{Long}} \cdot \sqrt{S^2 - \frac{d_{\text{Long}}^2}{4}}}{2 \cdot S}$$

Open Calculator 

$$\text{ex } 3.923009\text{m} = \frac{(18\text{m}) \cdot \sqrt{(10\text{m})^2 - \frac{(18\text{m})^2}{4}}}{2 \cdot (10\text{m})}$$





25) Inradius of Rhombus given Short Diagonal and Side 


fx

$$r_i = \frac{d_{\text{Short}} \cdot \sqrt{S^2 - \frac{d_{\text{Short}}^2}{4}}}{2 \cdot S}$$

Open Calculator 

ex


$$3.666061\text{m} = \frac{(8\text{m}) \cdot \sqrt{(10\text{m})^2 - \frac{(8\text{m})^2}{4}}}{2 \cdot (10\text{m})}$$

Perimeter of Rhombus 26) Perimeter of Rhombus 

$$P = 4 \cdot S$$

Open Calculator 

$$\text{ex } 40\text{m} = 4 \cdot 10\text{m}$$

27) Perimeter of Rhombus given Short Diagonal and Long Diagonal 

$$P = 2 \cdot \sqrt{d_{\text{Long}}^2 + d_{\text{Short}}^2}$$

Open Calculator 

$$\text{ex } 39.39543\text{m} = 2 \cdot \sqrt{(18\text{m})^2 + (8\text{m})^2}$$



## Side of Rhombus

### 28) Side of Rhombus given Short Diagonal and Long Diagonal

[Open Calculator !\[\]\(0f848bbd71cef6b345273b16f905912a\_img.jpg\)](#)

$$\text{fx } S = \frac{\sqrt{d_{\text{Long}}^2 + d_{\text{Short}}^2}}{2}$$

$$\text{ex } 9.848858\text{m} = \frac{\sqrt{(18\text{m})^2 + (8\text{m})^2}}{2}$$






## Variables Used

- $\angle_{\text{Acute}}$  Acute Angle of Rhombus (Degree)
- $\angle_{\text{Obtuse}}$  Obtuse Angle of Rhombus (Degree)
- **A** Area of Rhombus (Square Meter)
- $d_{\text{Long}}$  Long Diagonal of Rhombus (Meter)
- $d_{\text{Short}}$  Short Diagonal of Rhombus (Meter)
- **h** Height of Rhombus (Meter)
- **P** Perimeter of Rhombus (Meter)
- $r_i$  Inradius of Rhombus (Meter)
- **S** Side of Rhombus (Meter)



## Constants, Functions, Measurements used











- **Function:** **acos**,  $\text{acos}(\text{Number})$   
*Inverse trigonometric cosine function*
- **Function:** **asin**,  $\text{asin}(\text{Number})$   
*Inverse trigonometric sine function*
- **Function:** **cos**,  $\text{cos}(\text{Angle})$   
*Trigonometric cosine function*
- **Function:** **sin**,  $\text{sin}(\text{Angle})$   
*Trigonometric sine function*
- **Function:** **sqrt**,  $\text{sqrt}(\text{Number})$   
*Square root function*
- **Function:** **tan**,  $\text{tan}(\text{Angle})$   
*Trigonometric tangent function*
- **Measurement:** **Length** in Meter (m)  
*Length Unit Conversion* 
- **Measurement:** **Area** in Square Meter ( $\text{m}^2$ )  
*Area Unit Conversion* 
- **Measurement:** **Angle** in Degree ( $^\circ$ )  
*Angle 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 Quadrilateral 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](#)
- [Koch Curve Formulas](#)
- [L Shape Formulas](#)
- [Line Formulas](#)
- [Lune 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** 
- **Stretched Hexagon Formulas** 
- **T Shape Formulas** 
- **Tangential Quadrilateral Formulas** 
- **Trapezoid Formulas** 
- **Tricorn Formulas** 
- **Tri-equilateral Trapezoid Formulas** 
- **Truncated Square Formulas** 
- **Unicursal Hexagram Formulas** 
- **X Shape Formulas** 

Feel free to SHARE this document with your friends!

**PDF Available in**

[English](#) [Spanish](#) [French](#) [German](#) [Russian](#) [Italian](#) [Portuguese](#) [Polish](#) [Dutch](#)

5/17/2023 | 6:51:57 AM UTC

[Please leave your feedback here...](#)

