



Parallelogram Formulas

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List of 31 Parallelogram Formulas

Parallelogram 🗗

Angles of Parallelogram

fx
$$\angle_{
m Acute} = \pi - \angle_{
m Obtuse}$$

$$\texttt{ex}\left[45\degree = \pi - 135\degree\right]$$

2) Obtuse Angle of Parallelogram

fx
$$\angle_{ ext{Obtuse}} = \pi - \angle_{ ext{Acute}}$$

ex
$$135\degree=\pi-45\degree$$

Area of Parallelogram G

3) Area of Parallelogram

$$\mathbf{A} = \mathrm{e_{Long}} \cdot \mathrm{e_{Short}} \cdot \sin(\angle_{\mathrm{Acute}})$$

$$\texttt{ex} \ 59.39697 \text{m}^{_2} = 12 \text{m} \cdot 7 \text{m} \cdot \sin(45°)$$

4) Area of Parallelogram given Area of Long Diagonal Triangle 🛂

fx $A = 2 \cdot A_{l(Triangle)}$

$$60m^2 = 2 \cdot 30m$$

$$\textbf{ex} \ 60 \text{m}^{\scriptscriptstyle 2} = 2 \cdot 30 \text{m}^{\scriptscriptstyle 2}$$

5) Area of Parallelogram given Diagonals and Acute Angle between Diagonals 🕻

 $\mathbf{K} = rac{1}{2} \cdot \mathrm{d}_{\mathrm{Long}} \cdot \mathrm{d}_{\mathrm{Short}} \cdot \sin ig(igta_{\mathrm{d}(\mathrm{Acute})} ig)$

Open Calculator 🗗

- $oxed{ex} 62.0496 \mathrm{m}^{\scriptscriptstyle 2} = rac{1}{2} \cdot 18 \mathrm{m} \cdot 9 \mathrm{m} \cdot \sin(50\degree)$
- 6) Area of Parallelogram given Diagonals and Obtuse Angle between Diagonals
- $A = rac{1}{2} \cdot d_{Long} \cdot d_{Short} \cdot sinig(igselow{d_{Obtuse}} ig)$

Open Calculator

- $oxed{ex} \left[62.0496 \mathrm{m}^2 = rac{1}{2} \cdot 18 \mathrm{m} \cdot 9 \mathrm{m} \cdot \sin(130\degree)
 ight]$
- 7) Area of Parallelogram given Heights and Acute Angle 🗗
- $\mathbf{A} = rac{\mathbf{h}_{\mathrm{Long}} \cdot \mathbf{h}_{\mathrm{Short}}}{\sin(ot_{\mathrm{Acute}})}$

Open Calculator

- $oxed{ex} egin{aligned} 56.56854 \mathrm{m}^2 = rac{5 \mathrm{m} \cdot 8 \mathrm{m}}{\sin(45°)} \end{aligned}$
- 8) Area of Parallelogram given Heights and Obtuse Angle
- $ext{A} = rac{ ext{h}_{ ext{Long}} \cdot ext{h}_{ ext{Short}}}{\sin(extsup{continuous})}$

Open Calculator

 $ext{ex} 56.56854 ext{m}^2 = rac{5 ext{m} \cdot 8 ext{m}}{\sin(135°)}$



9) Area of Parallelogram given Long Edge and Height to Long Edge



Open Calculator

$$oxed{ex}60\mathrm{m}^{\scriptscriptstyle 2}=12\mathrm{m}\cdot5\mathrm{m}$$

10) Area of Parallelogram given Short Edge and Height to Short Edge

fx $A = e_{Short} \cdot h_{Short}$

Open Calculator

 $\boxed{\texttt{ex}} 56 \text{m}^2 = 7 \text{m} \cdot 8 \text{m}$

11) Area of Parallelogram given Sides and Obtuse Angle between Sides

 $\mathbf{K} = \mathbf{e}_{\mathrm{Long}} \cdot \mathbf{e}_{\mathrm{Short}} \cdot \sin(\angle_{\mathrm{Obtuse}})$

Open Calculator

$= 59.39697 \mathrm{m}^2 = 12 \mathrm{m} \cdot 7 \mathrm{m} \cdot \sin(135^\circ)$

Diagonal of Parallelogram 🗗

Long Diagonal of Parallelogram

12) Long Diagonal of Parallelogram 🖒

$$extbf{d}_{ ext{Long}} = \sqrt{\left(2 \cdot ext{e}_{ ext{Long}}^2
ight) + \left(2 \cdot ext{e}_{ ext{Short}}^2
ight) - ext{d}_{ ext{Short}}^2}$$

$$\mathbf{ex} \left[17.46425 \mathrm{m} = \sqrt{\left(2 \cdot \left(12 \mathrm{m} \right)^2 \right) + \left(2 \cdot \left(7 \mathrm{m} \right)^2 \right) - \left(9 \mathrm{m} \right)^2} \right]$$



13) Long Diagonal of Parallelogram given Area, Short Diagonal and Acute Angle between Diagonals

 $ext{fx} \, ext{d}_{ ext{Long}} = rac{ ext{d}_{ ext{Short}} \cdot \sin ig(igs _{ ext{d(Acute)}} ig)}{ ext{d}_{ ext{Short}} \cdot \sin ig(igs _{ ext{d(Acute)}} ig)}$

Open Calculator

Open Calculator

Open Calculator

ex
$$17.40543$$
m = $\frac{2 \cdot 60$ m²}{9m · sin(50°)}

14) Long Diagonal of Parallelogram given Sides and Acute Angle between Sides

fx $d_{Long} = \sqrt{e_{Long}^2 + e_{Short}^2 + (2 \cdot e_{Long} \cdot e_{Short} \cdot \cos(\angle_{Acute}))}$

 $17.65769 ext{m} = \sqrt{\left(12 ext{m}
ight)^2 + \left(7 ext{m}
ight)^2 + \left(2\cdot(12 ext{m})\cdot(7 ext{m})\cdot\cos(45^\circ)
ight)^2}$

15) Long Diagonal of Parallelogram given Sides and Obtuse Angle between sides

 $\mathrm{d_{Long}} = \sqrt{\mathrm{e_{Long}^2 + e_{Short}^2 - (2 \cdot \mathrm{e_{Long}} \cdot \mathrm{e_{Short}} \cdot \mathrm{cos}(\angle_{\mathrm{Obtuse}}))}$

fx



Short Diagonal of Parallelogram 🚰

16) Short Diagonal of Parallelogram 🗲

 $ext{d}_{ ext{Short}} = \sqrt{\left(2 \cdot ext{e}_{ ext{Long}}^2
ight) + \left(2 \cdot ext{e}_{ ext{Short}}^2
ight) - ext{d}_{ ext{Long}}^2}$

Open Calculator

$$= \sqrt{ \left(2 \cdot \left(12 \mathrm{m} \right)^2 \right) + \left(2 \cdot \left(7 \mathrm{m} \right)^2 \right) - \left(18 \mathrm{m} \right)^2 }$$

17) Short Diagonal of Parallelogram given Area, Long Diagonal and Obtuse Angle between Diagonals

 $ext{d}_{ ext{Short}} = rac{2 \cdot ext{A}}{ ext{d}_{ ext{Long}} \cdot \sin \left(igs _{ ext{d}(ext{Obtuse})}
ight)}$

Open Calculator

$$=$$
 $8.702715 \text{m} = rac{2 \cdot 60 \text{m}^2}{18 \text{m} \cdot \sin(130\degree)}$

18) Short Diagonal of Parallelogram given Sides and Acute Angle between Sides

fx

Open Calculator

$$m d_{Short} = \sqrt{e_{Long}^2 + e_{Short}^2 - (2 \cdot e_{Long} \cdot e_{Short} \cdot cos(\angle_{Acute}))}$$

$$= \sqrt{ (12 \mathrm{m})^2 + (7 \mathrm{m})^2 - (2 \cdot (12 \mathrm{m}) \cdot (7 \mathrm{m}) \cdot \cos(45°)) }$$



19) Short Diagonal of Parallelogram given Sides and Obtuse Angle between Sides

fx

Open Calculator

$$m d_{Short} = \sqrt{e_{Long}^2 + e_{Short}^2 + (2 \cdot e_{Long} \cdot e_{Short} \cdot \cos(\angle_{Obtuse}))}$$

$$ext{ex} \left[8.614294 ext{m} = \sqrt{\left(12 ext{m}
ight)^2 + \left(7 ext{m}
ight)^2 + \left(2 \cdot \left(12 ext{m}
ight) \cdot \left(7 ext{m}
ight) \cdot \cos(135\,^\circ)
ight)}
ight]$$

Perimeter of Parallelogram

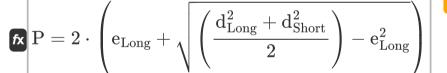
20) Perimeter of Parallelogram

fx $P = (2 \cdot e_{\mathrm{Long}}) + (2 \cdot e_{\mathrm{Short}})$

Open Calculator 🗗

$$\texttt{ex} \ 38 \text{m} = (2 \cdot 12 \text{m}) + (2 \cdot 7 \text{m})$$

21) Perimeter of Parallelogram given Diagonals and Long Edge



Open Calculator 🗗

Side of Parallelogram 🗗



Long Edge of Parallelogram

22) Long Edge of Parallelogram

$$e_{
m Long} = rac{
m A}{
m h_{
m Long}}$$

Open Calculator

$$\boxed{12m = \frac{60m^2}{5m}}$$

23) Long Edge of Parallelogram given Diagonals and Acute Angle between Diagonals

fx

$$m e_{Long} = rac{1}{2} \cdot \sqrt{d_{Long}^2 + d_{Short}^2 + \left(2 \cdot d_{Long} \cdot d_{Short} \cdot \cos\left(igtriangle_{d(Acute)}
ight)
ight)}$$

24) Long Edge of Parallelogram given Diagonals and Obtuse Angle between Diagonals

fx

$$m e_{Long} = rac{1}{2} \cdot \sqrt{d_{Long}^2 + d_{Short}^2 - \left(2 \cdot d_{Long} \cdot d_{Short} \cdot \cos(\angle_{d(Obtuse)})
ight)}$$

$$= 12.38208 \text{m} = \frac{1}{2} \cdot \sqrt{\left(18 \text{m}\right)^2 + \left(9 \text{m}\right)^2 - \left(2 \cdot \left(18 \text{m}\right) \cdot \left(9 \text{m}\right) \cdot \cos(130°)\right)}$$



25) Long Edge of Parallelogram given Diagonals and Short Edge

 $\left| \mathbf{f}_{\mathrm{Long}} = \sqrt{rac{\mathrm{d}_{\mathrm{Long}}^2 + \mathrm{d}_{\mathrm{Short}}^2 - \left(2 \cdot \mathrm{e}_{\mathrm{Short}}^2
ight)}{2}}
ight|$

Open Calculator 🗗

ex $12.38951 \mathrm{m} = \sqrt{rac{(18 \mathrm{m})^2 + (9 \mathrm{m})^2 - \left(2 \cdot (7 \mathrm{m})^2\right)}{2}}$

26) Long Edge of Parallelogram given Height to Short Edge and Acute Angle between Sides

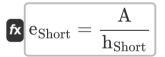
 $e_{
m Long} = rac{{
m h}_{
m Short}}{\sin({oldsymbol igselon}_{
m Acute})}$

Open Calculator

ex $11.31371 \text{m} = \frac{8 \text{m}}{\sin(45^\circ)}$

Short Edge of Parallelogram

27) Short Edge of Parallelogram



 $\boxed{7.5m = \frac{60m^2}{8m}}$



28) Short Edge of Parallelogram given Diagonals and Acute Angle between Diagonals

fx

Open Calculator

$$m e_{Short} = rac{1}{2} \cdot \sqrt{d_{Long}^2 + d_{Short}^2 - \left(2 \cdot d_{Long} \cdot d_{Short} \cdot \cos\left(igtriangle _{d(Acute)}
ight)
ight)}$$

29) Short Edge of Parallelogram given Diagonals and Long Edge

 $\mathbf{f}_{\mathbf{z}} = \sqrt{rac{\mathrm{d}_{\mathrm{Long}}^2 + \mathrm{d}_{\mathrm{Short}}^2 - \left(2 \cdot \mathrm{e}_{\mathrm{Long}}^2
ight)}{2}}$

Open Calculator

$$= \sqrt{\frac{\left(18\text{m}\right)^2 + \left(9\text{m}\right)^2 - \left(2 \cdot \left(12\text{m}\right)^2\right)}{2} }$$

30) Short Edge of Parallelogram given Diagonals and Obtuse Angle between Diagonals

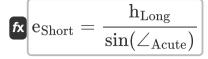
fx

Open Calculator

$$e_{Short} = \frac{1}{2} \cdot \sqrt{d_{Long}^2 + d_{Short}^2 + \left(2 \cdot d_{Long} \cdot d_{Short} \cdot \cos\left(\angle_{d(Obtuse)}\right)\right)}$$



31) Short Edge of Parallelogram given Height to Long Edge and Acute Angle between Sides



Open Calculator

$$= \frac{5 \text{m}}{\sin(45^\circ)}$$



Variables Used

- ∠Acute Acute Angle of Parallelogram (Degree)
- ∠d(Acute) Acute Angle between Diagonals of Parallelogram (Degree)
- ∠d(Obtuse) Obtuse Angle between Diagonals of Parallelogram (Degree)
- ∠Obtuse Obtuse Angle of Parallelogram (Degree)
- A Area of Parallelogram (Square Meter)
- Al(Triangle) Area of Long Diagonal Triangle of Parallelogram (Square Meter)
- **d**_{Long} Long Diagonal of Parallelogram (Meter)
- **d**Short Short Diagonal of Parallelogram (Meter)
- **e**Long Long Edge of Parallelogram (Meter)
- **e**Short Short Edge of Parallelogram (Meter)
- **h**Long Height to Long Edge of Parallelogram (Meter)
- hShort Height to Short Edge of Parallelogram (Meter)
- P Perimeter of Parallelogram (Meter)





Constants, Functions, Measurements used

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

 Trigonometric cosine function
- Function: **sin**, sin(Angle)

 Trigonometric sine function
- Function: sqrt, sqrt(Number) Square root function
- Measurement: Length in Meter (m)
 Length Unit Conversion
- Measurement: Area in Square Meter (m²)

 Area Unit Conversion
- Measurement: Angle in Degree (°)

 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 🗗 X Shape Formulas 🗗

- Trapezoid Formulas
- Tricorn Formulas
- Tri-equilateral Trapezoid Formulas
- Truncated Square Formulas
- Unicursal Hexagram Formulas

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