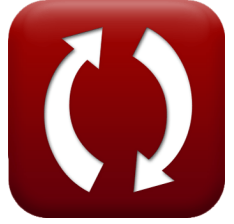calculatoratoz.com

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Quadrilateral Formulas

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List of 20 Quadrilateral Formulas

Quadrilateral ⤢

1) Sum of Perpendiculars drawn on Diagonal of Quadrilateral ⤢

fx $l_{\perp(\text{Sum})} = 2 \cdot \dfrac{A}{d_1}$

Open Calculator ⤢

ex $10.90909\text{m} = 2 \cdot \dfrac{60\text{m}^2}{11\text{m}}$

Angles of Quadrilateral ⤢

2) Angle A of Quadrilateral ⤢

fx $\angle A = \pi - \angle C$

Open Calculator ⤢

ex $95° = \pi - 85°$

3) Angle B of Quadrilateral ⤢

fx $\angle B = \pi - \angle D$

Open Calculator ⤢

ex $70° = \pi - 110°$

4) Angle C of Quadrilateral ⤢

fx $\angle C = \pi - \angle A$

Open Calculator ⤢

ex $85° = \pi - 95°$

5) Angle D of Quadrilateral given other Three Angles 🔗

fx $\angle D = (2 \cdot \pi) - (\angle A + \angle B + \angle C)$

ex $110° = (2 \cdot \pi) - (95° + 70° + 85°)$

Area of Quadrilateral 🔗

6) Area of Quadrilateral 🔗

fx $A = \dfrac{1}{2} \cdot d_1 \cdot l_{\perp(\text{Sum})}$

ex $66\text{m}^2 = \dfrac{1}{2} \cdot 11\text{m} \cdot 12\text{m}$

7) Area of Quadrilateral given Angles and Sides 🔗

fx $A = \dfrac{(S_a \cdot S_d \cdot \sin(\angle A)) + (S_b \cdot S_c \cdot \sin(\angle C))}{2}$

ex $60.76788\text{m}^2 = \dfrac{(10\text{m} \cdot 5\text{m} \cdot \sin(95°)) + (9\text{m} \cdot 8\text{m} \cdot \sin(85°))}{2}$

8) Area of Quadrilateral given Diagonals and Angle between Diagonals 🔗

fx $A = \dfrac{d_1 \cdot d_2}{2} \cdot \sin(\angle_{\text{Diagonals}})$

ex $63.7511\text{m}^2 = \dfrac{11\text{m} \cdot 12\text{m}}{2} \cdot \sin(105°)$

9) Area of Quadrilateral given Diagonals and Sides ⤢

fx $$A = \frac{\sqrt{\left(4 \cdot d_1^2 \cdot d_2^2\right) - \left(S_a^2 + S_c^2 - S_b^2 - S_d^2\right)^2}}{4}$$

ex

$$64.3875\text{m}^2 = \frac{\sqrt{\left(4 \cdot (11\text{m})^2 \cdot (12\text{m})^2\right) - \left((10\text{m})^2 + (8\text{m})^2 - (9\text{m})^2 - (5\text{m})^2\right)^2}}{4}$$

Diagonals of Quadrilateral ⤢

10) Diagonal 1 of Quadrilateral ⤢

fx $d_1 = \sqrt{S_a^2 + S_b^2 - (2 \cdot S_a \cdot S_b \cdot \cos(\angle B))}$

ex $10.92869\text{m} = \sqrt{(10\text{m})^2 + (9\text{m})^2 - (2 \cdot (10\text{m}) \cdot (9\text{m}) \cdot \cos(70°))}$

11) Diagonal 1 of Quadrilateral given Area and Heights of Columns ⤢

fx $d_1 = 2 \cdot \dfrac{A}{h_1 + h_2}$

ex $10\text{m} = 2 \cdot \dfrac{60\text{m}^2}{4\text{m} + 8\text{m}}$

12) Diagonal 2 of Quadrilateral ⤢

fx $d_2 = \sqrt{S_b^2 + S_c^2 - (2 \cdot S_b \cdot S_c \cdot \cos(\angle C))}$

ex $11.50867\text{m} = \sqrt{(9\text{m})^2 + (8\text{m})^2 - (2 \cdot (9\text{m}) \cdot (8\text{m}) \cdot \cos(85°))}$

Perimeter and Semiperimeter of Quadrilateral 🔗

13) Perimeter of Quadrilateral 🔗

fx $P = S_a + S_b + S_c + S_d$

ex $32m = 10m + 9m + 8m + 5m$

14) Perimeter of Quadrilateral given Semiperimeter 🔗

fx $P = 2 \cdot s$

ex $32m = 2 \cdot 16m$

15) Semiperimeter of Quadrilateral 🔗

fx $s = \dfrac{P}{2}$

ex $16m = \dfrac{32m}{2}$

16) Semiperimeter of Quadrilateral given Sides 🔗

fx $s = \dfrac{S_a + S_b + S_c + S_d}{2}$

ex $16m = \dfrac{10m + 9m + 8m + 5m}{2}$

Sides of Quadrilateral 🔗

17) Side A of Quadrilateral 🔗

fx $S_a = P - (S_b + S_c + S_d)$

Open Calculator 🔗

ex $10m = 32m - (9m + 8m + 5m)$

18) Side B of Quadrilateral 🔗

fx $S_b = P - (S_a + S_c + S_d)$

Open Calculator 🔗

ex $9m = 32m - (10m + 8m + 5m)$

19) Side C of Quadrilateral 🔗

fx $S_c = P - (S_a + S_b + S_d)$

Open Calculator 🔗

ex $8m = 32m - (10m + 9m + 5m)$

20) Side D of Quadrilateral 🔗

fx $S_d = P - (S_a + S_b + S_c)$

Open Calculator 🔗

ex $5m = 32m - (10m + 9m + 8m)$

Variables Used

- $\angle_{\textbf{Diagonals}}$ Angle between Diagonals of Quadrilateral *(Degree)*
- $\angle\textbf{A}$ Angle A of Quadrilateral *(Degree)*
- $\angle\textbf{B}$ Angle B of Quadrilateral *(Degree)*
- $\angle\textbf{C}$ Angle C of Quadrilateral *(Degree)*
- $\angle\textbf{D}$ Angle D of Quadrilateral *(Degree)*
- $\textbf{A}$ Area of Quadrilateral *(Square Meter)*
- $\textbf{d}_1$ Diagonal 1 of Quadrilateral *(Meter)*
- $\textbf{d}_2$ Diagonal 2 of Quadrilateral *(Meter)*
- $\textbf{h}_1$ Height of Column 1 of Quadrilateral *(Meter)*
- $\textbf{h}_2$ Height of Column 2 of Quadrilateral *(Meter)*
- $\textbf{l}_{\perp\textbf{(Sum)}}$ Sum of Length of Perpendiculars of Quadrilateral *(Meter)*
- $\textbf{P}$ Perimeter of Quadrilateral *(Meter)*
- $\textbf{s}$ Semiperimeter of Quadrilateral *(Meter)*
- $\textbf{S}_\textbf{a}$ Side A of Quadrilateral *(Meter)*
- $\textbf{S}_\textbf{b}$ Side B of Quadrilateral *(Meter)*
- $\textbf{S}_\textbf{c}$ Side C of Quadrilateral *(Meter)*
- $\textbf{S}_\textbf{d}$ Side D of Quadrilateral *(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 🔗

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- **Astroid Formulas**
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- **Cardioid Formulas**
- **Circular Arc Quadrangle Formulas**
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