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Important Formulas of Frame

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List of 14 Important Formulas of Frame

Important Formulas of Frame

1) Area of Frame

Open Calculator

fx $$A = (l_{Outer} \cdot w_{Outer}) - (l_{Inner} \cdot w_{Inner})$$

ex $$126m^2 = (15m \cdot 12m) - (9m \cdot 6m)$$

2) Area of Frame given Inner Length, Inner Width and Thickness

Open Calculator

fx $$A = ((l_{Inner} + (2 \cdot t)) \cdot (w_{Inner} + (2 \cdot t))) - (l_{Inner} \cdot w_{Inner})$$

ex $$126m^2 = ((9m + (2 \cdot 3m)) \cdot (6m + (2 \cdot 3m))) - (9m \cdot 6m)$$

3) Area of Frame given Outer Length, Outer Width and Thickness

Open Calculator

fx $$A = (l_{Outer} \cdot w_{Outer}) - ((l_{Outer} - (2 \cdot t)) \cdot (w_{Outer} - (2 \cdot t)))$$

ex $$126m^2 = (15m \cdot 12m) - ((15m - (2 \cdot 3m)) \cdot (12m - (2 \cdot 3m)))$$

4) Inner Length of Frame

Open Calculator

fx $$l_{Inner} = l_{Outer} - (2 \cdot t)$$

ex $$9m = 15m - (2 \cdot 3m)$$

5) Inner Length of Frame given Outer Length and Vertex Diagonal

Open Calculator

fx $$l_{Inner} = l_{Outer} - \left(\sqrt{2} \cdot d_{Vertex}\right)$$

ex $$9.343146\text{m} = 15\text{m} - \left(\sqrt{2} \cdot 4\text{m}\right)$$

6) Inner Width of Frame

Open Calculator

fx $$w_{Inner} = w_{Outer} - (2 \cdot t)$$

ex $$6\text{m} = 12\text{m} - (2 \cdot 3\text{m})$$

7) Outer Length of Frame

Open Calculator

fx $$l_{Outer} = l_{Inner} + (2 \cdot t)$$

ex $$15\text{m} = 9\text{m} + (2 \cdot 3\text{m})$$

8) Outer Length of Frame given Area, Inner Length, Inner and Outer Widths

Open Calculator

fx $$l_{Outer} = \frac{A + (l_{Inner} \cdot w_{Inner})}{w_{Outer}}$$

ex $$14.91667\text{m} = \frac{125\text{m}^2 + (9\text{m} \cdot 6\text{m})}{12\text{m}}$$

9) Outer Width of Frame

Open Calculator

fx $w_{Outer} = w_{Inner} + (2 \cdot t)$

ex $12m = 6m + (2 \cdot 3m)$

10) Perimeter of Frame

Open Calculator

fx $P = 2 \cdot (l_{Outer} + l_{Inner} + w_{Outer} + w_{Inner})$

ex $84m = 2 \cdot (15m + 9m + 12m + 6m)$

11) Perimeter of Frame given Inner Length and Outer Width

Open Calculator

fx $P = 4 \cdot (l_{Inner} + w_{Outer})$

ex $84m = 4 \cdot (9m + 12m)$

12) Thickness of Frame given Inner and Outer Lengths

Open Calculator

fx $t = \frac{l_{Outer} - l_{Inner}}{2}$

ex $3m = \frac{15m - 9m}{2}$

13) Thickness of Frame given Inner and Outer Widths

Open Calculator

fx $t = \frac{w_{Outer} - w_{Inner}}{2}$

ex $3m = \frac{12m - 6m}{2}$

14) Vertex Diagonal of Frame

Open Calculator

fx $$d_{Vertex} = \sqrt{2} \cdot t$$

ex $$4.242641\text{m} = \sqrt{2} \cdot 3\text{m}$$

Variables Used

- **A** Area of Frame *(Square Meter)*
- d_{Vertex} Vertex Diagonal of Frame *(Meter)*
- l_{Inner} Inner Length of Frame *(Meter)*
- l_{Outer} Outer Length of Frame *(Meter)*
- **P** Perimeter of Frame *(Meter)*
- **t** Thickness of Frame *(Meter)*
- w_{Inner} Inner Width of Frame *(Meter)*
- w_{Outer} Outer Width of Frame *(Meter)*

Constants, Functions, Measurements used

- Function: **sqrt**, sqrt(Number)
  Square root function
- 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
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