

# Important Wedge Cuboid Formulas PDF



**Formulas**  
**Examples**  
**with Units**

**List of 14**  
**Important Wedge Cuboid Formulas**

## 1) Area and Volume of Wedge Cuboid Formulas

### 1.1) Total Surface Area of Wedge Cuboid Formula

Evaluate Formula 

Formula

$$TSA = (l \cdot w) + (l_{\text{slant}} \cdot w) + (w \cdot h_{\text{Short}}) + (w \cdot h_{\text{Long}}) + (l \cdot (h_{\text{Short}} + h_{\text{Long}}))$$

Example with Units

$$760\text{m}^2 = (10\text{m} \cdot 8\text{m}) + (13\text{m} \cdot 8\text{m}) + (8\text{m} \cdot 12\text{m}) + (8\text{m} \cdot 20\text{m}) + (10\text{m} \cdot (12\text{m} + 20\text{m}))$$

### 1.2) Volume of Wedge Cuboid Formula

Evaluate Formula 

Formula

$$V = (l \cdot w \cdot h_{\text{Short}}) + \left( l \cdot w \cdot \frac{h_{\text{Long}} - h_{\text{Short}}}{2} \right)$$

Example with Units

$$1280\text{m}^3 = (10\text{m} \cdot 8\text{m} \cdot 12\text{m}) + \left( 10\text{m} \cdot 8\text{m} \cdot \frac{20\text{m} - 12\text{m}}{2} \right)$$

## 2) Diagonal of Wedge Cuboid Formulas

### 2.1) Long Diagonal of Wedge Cuboid Formula

Evaluate Formula 

Formula

$$d_{\text{Long}} = \sqrt{l^2 + w^2 + h_{\text{Long}}^2}$$

Example with Units

$$23.7487\text{m} = \sqrt{10\text{m}^2 + 8\text{m}^2 + 20\text{m}^2}$$

### 2.2) Short Diagonal of Wedge Cuboid Formula

Evaluate Formula 

Formula

$$d_{\text{Short}} = \sqrt{l^2 + w^2 + h_{\text{Short}}^2}$$

Example with Units

$$17.5499\text{m} = \sqrt{10\text{m}^2 + 8\text{m}^2 + 12\text{m}^2}$$



### 3) Height of Wedge Cuboid Formulas ↻

#### 3.1) Long Height of Wedge Cuboid given Long Diagonal Formula ↻

Formula

$$h_{\text{Long}} = \sqrt{d_{\text{Long}}^2 - l^2 - w^2}$$

Example with Units

$$20.2978\text{m} = \sqrt{24\text{m}^2 - 10\text{m}^2 - 8\text{m}^2}$$

Evaluate Formula ↻

#### 3.2) Short Height of Wedge Cuboid given Short Diagonal Formula ↻

Formula

$$h_{\text{Short}} = \sqrt{d_{\text{Short}}^2 - l^2 - w^2}$$

Example with Units

$$12.6491\text{m} = \sqrt{18\text{m}^2 - 10\text{m}^2 - 8\text{m}^2}$$

Evaluate Formula ↻

### 4) Length of Wedge Cuboid Formulas ↻

#### 4.1) Length of Wedge Cuboid given Long Diagonal Formula ↻

Formula

$$l = \sqrt{d_{\text{Long}}^2 - w^2 - h_{\text{Long}}^2}$$

Example with Units

$$10.583\text{m} = \sqrt{24\text{m}^2 - 8\text{m}^2 - 20\text{m}^2}$$

Evaluate Formula ↻

#### 4.2) Length of Wedge Cuboid given Short Diagonal Formula ↻

Formula

$$l = \sqrt{d_{\text{Short}}^2 - w^2 - h_{\text{Short}}^2}$$

Example with Units

$$10.7703\text{m} = \sqrt{18\text{m}^2 - 8\text{m}^2 - 12\text{m}^2}$$

Evaluate Formula ↻

#### 4.3) Length of Wedge Cuboid given Slant Length Formula ↻

Formula

$$l = \sqrt{l_{\text{Slant}}^2 - (h_{\text{Long}} - h_{\text{Short}})^2}$$

Example with Units

$$10.247\text{m} = \sqrt{13\text{m}^2 - (20\text{m} - 12\text{m})^2}$$

Evaluate Formula ↻

#### 4.4) Length of Wedge Cuboid given Volume Formula ↻

Formula

$$l = \frac{V}{\left(w \cdot h_{\text{Short}}\right) + \left(w \cdot \frac{h_{\text{Long}} - h_{\text{Short}}}{2}\right)}$$

Example with Units

$$10\text{m} = \frac{1280\text{m}^3}{\left(8\text{m} \cdot 12\text{m}\right) + \left(8\text{m} \cdot \frac{20\text{m} - 12\text{m}}{2}\right)}$$

Evaluate Formula ↻

#### 4.5) Slant Length of Wedge Cuboid Formula ↻

Formula

$$l_{\text{Slant}} = \sqrt{l^2 + (h_{\text{Long}} - h_{\text{Short}})^2}$$

Example with Units

$$12.8062\text{m} = \sqrt{10\text{m}^2 + (20\text{m} - 12\text{m})^2}$$

Evaluate Formula ↻



## 5) Width of Wedge Cuboid Formulas

### 5.1) Width of Wedge Cuboid given Long Diagonal Formula

Formula

$$w = \sqrt{d_{\text{Long}}^2 - l^2 - h_{\text{Long}}^2}$$

Example with Units

$$8.7178\text{m} = \sqrt{24\text{m}^2 - 10\text{m}^2 - 20\text{m}^2}$$

Evaluate Formula 

### 5.2) Width of Wedge Cuboid given Short Diagonal Formula

Formula

$$w = \sqrt{d_{\text{Short}}^2 - l^2 - h_{\text{Short}}^2}$$

Example with Units

$$8.9443\text{m} = \sqrt{18\text{m}^2 - 10\text{m}^2 - 12\text{m}^2}$$

Evaluate Formula 

### 5.3) Width of Wedge Cuboid given Volume Formula

Formula

$$w = \frac{V}{\left( l \cdot h_{\text{Short}} \right) + \left( l \cdot \frac{h_{\text{Long}} - h_{\text{Short}}}{2} \right)}$$

Example with Units

$$8\text{m} = \frac{1280\text{m}^3}{\left( 10\text{m} \cdot 12\text{m} \right) + \left( 10\text{m} \cdot \frac{20\text{m} - 12\text{m}}{2} \right)}$$




Evaluate Formula 



## Variables used in list of Wedge Cuboid Formulas above



- **d<sub>Long</sub>** Long Diagonal of Wedge Cuboid (Meter)
- **d<sub>Short</sub>** Short Diagonal of Wedge Cuboid (Meter)
- **h<sub>Long</sub>** Long Height of Wedge Cuboid (Meter)
- **h<sub>Short</sub>** Short Height of Wedge Cuboid (Meter)
- **l** Length of Wedge Cuboid (Meter)
- **l<sub>Slant</sub>** Slant Length of Wedge Cuboid (Meter)
- **TSA** Total Surface Area of Wedge Cuboid (Square Meter)
- **V** Volume of Wedge Cuboid (Cubic Meter)
- **w** Width of Wedge Cuboid (Meter)

## Constants, Functions, Measurements used in list of Wedge Cuboid Formulas above

- **Functions:** **sqrt**, sqrt(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.*
- **Measurement:** **Length** in Meter (m)  
*Length Unit Conversion* 
- **Measurement:** **Volume** in Cubic Meter (m<sup>3</sup>)  
*Volume Unit Conversion* 
- **Measurement:** **Area** in Square Meter (m<sup>2</sup>)  
*Area Unit Conversion* 



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