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Right Square Pyramid Formulas

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List of 16 Right Square Pyramid Formulas

Right Square Pyramid

Edge Length of Right Square Pyramid

1) Edge Length of Base of Right Square Pyramid given Slant Height

$$fx \quad l_{e(\text{Base})} = 2 \cdot \sqrt{h_{\text{slant}}^2 - h^2}$$

Open Calculator 

$$ex \quad 11.13553m = 2 \cdot \sqrt{(16m)^2 - (15m)^2}$$

2) Edge Length of Base of Right Square Pyramid given Volume

$$fx \quad l_{e(\text{Base})} = \sqrt{\frac{3 \cdot V}{h}}$$

Open Calculator 

$$ex \quad 10m = \sqrt{\frac{3 \cdot 500m^3}{15m}}$$



Height of Right Square Pyramid

3) Height of Right Square Pyramid given Slant Height

$$\text{fx } h = \sqrt{h_{\text{slant}}^2 - \frac{l_{\text{e(Base)}}^2}{4}}$$

[Open Calculator !\[\]\(a03a7eb2f4046e1d3c76772003e549ea_img.jpg\)](#)

$$\text{ex } 15.19868\text{m} = \sqrt{(16\text{m})^2 - \frac{(10\text{m})^2}{4}}$$

4) Height of Right Square Pyramid given Volume

$$\text{fx } h = \frac{3 \cdot V}{l_{\text{e(Base)}}^2}$$

[Open Calculator !\[\]\(5361750c22c4e047a52f4eac1ec2d4cc_img.jpg\)](#)

$$\text{ex } 15\text{m} = \frac{3 \cdot 500\text{m}^3}{(10\text{m})^2}$$

5) Slant Height of Right Square Pyramid

$$\text{fx } h_{\text{slant}} = \sqrt{h^2 + \frac{l_{\text{e(Base)}}^2}{4}}$$

[Open Calculator !\[\]\(b792654f2cef9719eabeb6c5be00811e_img.jpg\)](#)

$$\text{ex } 15.81139\text{m} = \sqrt{(15\text{m})^2 + \frac{(10\text{m})^2}{4}}$$



6) Slant Height of Right Square Pyramid given Volume Open Calculator 

$$\text{fx } h_{\text{slant}} = \sqrt{\frac{l_{e(\text{Base})}^2}{4} + \left(\frac{3 \cdot V}{l_{e(\text{Base})}^2}\right)^2}$$

$$\text{ex } 15.81139\text{m} = \sqrt{\frac{(10\text{m})^2}{4} + \left(\frac{3 \cdot 500\text{m}^3}{(10\text{m})^2}\right)^2}$$

Lateral Edge Length of Right Square Pyramid 7) Lateral Edge Length of Right Square Pyramid Open Calculator 

$$\text{fx } l_{e(\text{Lateral})} = \sqrt{h^2 + \frac{l_{e(\text{Base})}^2}{2}}$$

$$\text{ex } 16.58312\text{m} = \sqrt{(15\text{m})^2 + \frac{(10\text{m})^2}{2}}$$

8) Lateral Edge Length of Right Square Pyramid given Slant Height Open Calculator 

$$\text{fx } l_{e(\text{Lateral})} = \sqrt{\frac{l_{e(\text{Base})}^2}{4} + h_{\text{slant}}^2}$$

$$\text{ex } 16.76305\text{m} = \sqrt{\frac{(10\text{m})^2}{4} + (16\text{m})^2}$$



9) Lateral Edge Length of Right Square Pyramid given Volume

$$\text{fx } l_{e(\text{Lateral})} = \sqrt{\frac{l_{e(\text{Base})}^2}{2} + \left(\frac{3 \cdot V}{l_{e(\text{Base})}^2}\right)^2}$$

[Open Calculator !\[\]\(e2376d476d06eb31946dc01a69a4403a_img.jpg\)](#)

$$\text{ex } 16.58312\text{m} = \sqrt{\frac{(10\text{m})^2}{2} + \left(\frac{3 \cdot 500\text{m}^3}{(10\text{m})^2}\right)^2}$$

Surface Area of Right Square Pyramid

10) Base Area of Right Square Pyramid

$$\text{fx } A_{\text{Base}} = l_{e(\text{Base})}^2$$

[Open Calculator !\[\]\(8bba887393ca45b761e5cb49e755e762_img.jpg\)](#)

$$\text{ex } 100\text{m}^2 = (10\text{m})^2$$

11) Lateral Surface Area of Right Square Pyramid

$$\text{fx } \text{LSA} = l_{e(\text{Base})} \cdot \sqrt{l_{e(\text{Base})}^2 + (4 \cdot h^2)}$$

[Open Calculator !\[\]\(0fb13ad0bfa3d86868cdd3883e5665b3_img.jpg\)](#)

$$\text{ex } 316.2278\text{m}^2 = 10\text{m} \cdot \sqrt{(10\text{m})^2 + (4 \cdot (15\text{m})^2)}$$

12) Lateral Surface Area of Right Square Pyramid given Slant Height

$$\text{fx } \text{LSA} = 2 \cdot l_{e(\text{Base})} \cdot h_{\text{slant}}$$

[Open Calculator !\[\]\(e50091943b385fe16d3277389202856f_img.jpg\)](#)

$$\text{ex } 320\text{m}^2 = 2 \cdot 10\text{m} \cdot 16\text{m}$$



13) Total Surface Area of Right Square Pyramid

fx

Open Calculator 

$$\text{TSA} = l_{e(\text{Base})}^2 + \left(l_{e(\text{Base})} \cdot \sqrt{l_{e(\text{Base})}^2 + (4 \cdot h^2)} \right)$$

ex

$$416.2278\text{m}^2 = (10\text{m})^2 + \left(10\text{m} \cdot \sqrt{(10\text{m})^2 + (4 \cdot (15\text{m})^2)} \right)$$

14) Total Surface Area of Right Square Pyramid given Slant Height

fx

Open Calculator 

$$\text{TSA} = l_{e(\text{Base})}^2 + (2 \cdot l_{e(\text{Base})} \cdot h_{\text{slant}})$$

ex

$$420\text{m}^2 = (10\text{m})^2 + (2 \cdot 10\text{m} \cdot 16\text{m})$$

Volume of Right Square Pyramid

15) Volume of Right Square Pyramid

fx

Open Calculator 

$$V = \frac{l_{e(\text{Base})}^2 \cdot h}{3}$$

ex

$$500\text{m}^3 = \frac{(10\text{m})^2 \cdot 15\text{m}}{3}$$



16) Volume of Right Square Pyramid given Slant Height **Open Calculator** **fx**

$$V = \frac{l_{e(\text{Base})}^2 \cdot \sqrt{h_{\text{slant}}^2 - \frac{l_{e(\text{Base})}^2}{4}}}{3}$$

ex

$$506.6228\text{m}^3 = \frac{(10\text{m})^2 \cdot \sqrt{(16\text{m})^2 - \frac{(10\text{m})^2}{4}}}{3}$$






Variables Used

- **A_{Base}** Base Area of Right Square Pyramid (*Square Meter*)
- **h** Height of Right Square Pyramid (*Meter*)
- **h_{slant}** Slant Height of Right Square Pyramid (*Meter*)
- **$l_{\text{e(Base)}}$** Edge Length of Base of Right Square Pyramid (*Meter*)
- **$l_{\text{e(Lateral)}}$** Lateral Edge Length of Right Square Pyramid (*Meter*)
- **LSA** Lateral Surface Area of Right Square Pyramid (*Square Meter*)
- **TSA** Total Surface Area of Right Square Pyramid (*Square Meter*)
- **V** Volume of Right Square Pyramid (*Cubic Meter*)



Constants, Functions, Measurements used

- **Function:** **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 (m³)
Volume Unit Conversion 
- **Measurement:** **Area** in Square Meter (m²)
Area Unit Conversion 



Check other formula lists

- [Right Square Pyramid Formulas](#) 
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