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Tesseract Formulas

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List of 12 Tesseract Formulas

Tesseract

Edge Length of Tesseract

1) Edge Length of Tesseract given Hypervolume

$$fx \quad l_e = V_{\text{Hyper}}^{\frac{1}{4}}$$

Open Calculator 

$$ex \quad 5m = (625m^4)^{\frac{1}{4}}$$

2) Edge Length of Tesseract given Surface Area

$$fx \quad l_e = \sqrt{\frac{SA}{24}}$$

Open Calculator 

$$ex \quad 5m = \sqrt{\frac{600m^2}{24}}$$

3) Edge Length of Tesseract given Surface Volume

$$fx \quad l_e = \frac{V_{\text{Surface}}^{\frac{1}{3}}}{2}$$

Open Calculator 

$$ex \quad 5m = \frac{(1000m^3)^{\frac{1}{3}}}{2}$$



Hypervolume of Tesseract

4) Hypervolume of Tesseract

$$\text{fx } V_{\text{Hyper}} = l_e^4$$

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

$$\text{ex } 625\text{m}^4 = (5\text{m})^4$$

5) Hypervolume of Tesseract given Surface Area

$$\text{fx } V_{\text{Hyper}} = \frac{SA^2}{576}$$

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

$$\text{ex } 625\text{m}^4 = \frac{(600\text{m}^2)^2}{576}$$

6) Hypervolume of Tesseract given Surface Volume

$$\text{fx } V_{\text{Hyper}} = \left(\frac{V_{\text{Surface}}}{8} \right)^{\frac{4}{3}}$$

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

$$\text{ex } 625\text{m}^4 = \left(\frac{1000\text{m}^3}{8} \right)^{\frac{4}{3}}$$



Surface Area of Tesseract

7) Surface Area of Tesseract

$$fx \quad SA = 24 \cdot (l_e^2)$$

[Open Calculator !\[\]\(23d9fc146e83b5c3013cfa32c784f8d5_img.jpg\)](#)

$$ex \quad 600m^2 = 24 \cdot ((5m)^2)$$

8) Surface Area of Tesseract given Hypervolume

$$fx \quad SA = 24 \cdot \sqrt{V_{\text{Hyper}}}$$

[Open Calculator !\[\]\(aa53ad6fea213b8b2226d3077e30533a_img.jpg\)](#)

$$ex \quad 600m^2 = 24 \cdot \sqrt{625m^4}$$

9) Surface Area of Tesseract given Surface Volume

$$fx \quad SA = 6 \cdot V_{\text{Surface}}^{\frac{2}{3}}$$

[Open Calculator !\[\]\(626ce8ac21792b9405bfddfea8e0c96a_img.jpg\)](#)

$$ex \quad 600m^2 = 6 \cdot (1000m^3)^{\frac{2}{3}}$$

Surface Volume of Tesseract

10) Surface Volume of Tesseract

$$fx \quad V_{\text{Surface}} = 8 \cdot (l_e^3)$$

[Open Calculator !\[\]\(cbd8541a32dfc32f356f5c6c994b0a21_img.jpg\)](#)

$$ex \quad 1000m^3 = 8 \cdot ((5m)^3)$$



11) Surface Volume of Tesseract given Hypervolume

$$fx \quad V_{\text{Surface}} = 8 \cdot V_{\text{Hyper}}^{\frac{3}{4}}$$

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

$$ex \quad 1000\text{m}^3 = 8 \cdot (625\text{m}^4)^{\frac{3}{4}}$$

12) Surface Volume of Tesseract given Surface Area

$$fx \quad V_{\text{Surface}} = \left(\frac{\text{SA}}{6} \right)^{\frac{3}{2}}$$

[Open Calculator !\[\]\(0b5e7e25e8775f7e7e80906ada4f0021_img.jpg\)](#)

$$ex \quad 1000\text{m}^3 = \left(\frac{600\text{m}^2}{6} \right)^{\frac{3}{2}}$$







Variables Used

- I_e Edge Length of Tesseract (Meter)
- **SA** Surface Area of Tesseract (Square Meter)
- V_{Hyper} Hypervolume of Tesseract (Meter⁴)
- V_{Surface} Surface Volume of Tesseract (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 
- **Measurement:** **Four-Dimensional Hypervolume** in Meter⁴ (m⁴)
Four-Dimensional Hypervolume Unit Conversion 



Check other formula lists

- [Hypersphere Formulas](#) 
- [Tesseract Formulas](#) 

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