Important Tesseract Formulas PDF

Formulas
Examples
with Units

List of 12
Important Tesseract Formulas

1) Edge Length of Tesseract Formulas

1.1) Edge Length of Tesseract given Hypervolume Formula

Evaluate Formula

Formula

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

Example with Units

$$5\,\text{m} = 625\,\text{m}^4{}^{\frac{1}{4}}$$

1.2) Edge Length of Tesseract given Surface Area Formula

Evaluate Formula

Formula

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

Example with Units

$$5\,\text{m} = \sqrt{\frac{600\,\text{m}^2}{24}}$$

1.3) Edge Length of Tesseract given Surface Volume Formula

Evaluate Formula

Formula

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

Example with Units

$$5\,\text{m} = \frac{1000\,\text{m}^3{}^{\frac{1}{3}}}{2}$$

2) Hypervolume of Tesseract Formulas

2.1) Hypervolume of Tesseract Formula

Evaluate Formula

Formula

$$V_{Hyper} = l_e^4$$

Example with Units

$$625\,\text{m}^4 = 5\,\text{m}^4$$

2.2) Hypervolume of Tesseract given Surface Area Formula

Evaluate Formula

Formula

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

Example with Units

$$625\,\text{m}^4 = \frac{600\,\text{m}^2{}^2}{576}$$

2.3) Hypervolume of Tesseract given Surface Volume Formula

Evaluate Formula

Formula

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

Example with Units

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

3) Surface Area of Tesseract Formulas

3.1) Surface Area of Tesseract Formula

Evaluate Formula

Formula

$$SA = 24 \cdot \left(l_e^{\,2}\right)$$

Example with Units

$$600\,\text{m}^2 = 24 \cdot \left(5\,\text{m}^{\,2}\right)$$

3.2) Surface Area of Tesseract given Hypervolume Formula

Evaluate Formula

Formula

$$SA = 24 \cdot \sqrt{V_{Hyper}}$$

Example with Units

$$600\,\text{m}^2 = 24 \cdot \sqrt{625\,\text{m}^4}$$

3.3) Surface Area of Tesseract given Surface Volume Formula

Evaluate Formula

Formula

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

Example with Units

$$600\,\text{m}^2 = 6 \cdot 1000\,\text{m}^{3\,\frac{2}{3}}$$

4) Surface Volume of Tesseract Formulas

4.1) Surface Volume of Tesseract Formula

Evaluate Formula

Formula

$$V_{Surface} = 8 \cdot \left(l_e^{\,3}\right)$$

Example with Units

$$1000\,\text{m}^3 = 8 \cdot \left(5\,\text{m}^{\,3}\right)$$

4.2) Surface Volume of Tesseract given Hypervolume Formula

Evaluate Formula

Formula

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

Example with Units

$$1000\,\text{m}^3 = 8 \cdot 625\,\text{m}^{4\,\frac{3}{4}}$$

4.3) Surface Volume of Tesseract given Surface Area Formula

Evaluate Formula

Formula

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

Example with Units

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

Variables used in list of Tesseract Formulas above

- l_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 in list of Tesseract 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 (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

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