Important Formulas of Elliptic Cylinder PDF

Formulas
Examples
with Units

List of 13
Important Formulas of Elliptic Cylinder

1) Height of Elliptic Cylinder Formula

Formula

$$h = \frac{LSA}{\pi \cdot (b + a)}$$

Example with Units

$$5.0399\,\text{m} = \frac{95\,\text{m}^2}{3.1416 \cdot (2\,\text{m} + 4\,\text{m})}$$

Evaluate Formula

2) Height of Elliptic Cylinder given Volume Formula

Formula

$$h = \frac{V}{\pi \cdot b \cdot a}$$

Example with Units

$$4.9736\,\text{m} = \frac{125\,\text{m}^3}{3.1416 \cdot 2\,\text{m} \cdot 4\,\text{m}}$$

Evaluate Formula

3) Lateral Surface Area of Elliptic Cylinder Formula

Formula

$$LSA = \pi \cdot (b + a) \cdot h$$

Example with Units

$$94.2478\,\text{m}^2 = 3.1416 \cdot (2\,\text{m} + 4\,\text{m}) \cdot 5\,\text{m}$$

Evaluate Formula

4) Lateral Surface Area of Elliptic Cylinder given Volume Formula

Formula

$$LSA = \pi \cdot (b + a) \cdot \frac{V}{\pi \cdot b \cdot a}$$

Example with Units

$$93.75\,\text{m}^2 = 3.1416 \cdot (2\,\text{m} + 4\,\text{m}) \cdot \frac{125\,\text{m}^3}{3.1416 \cdot 2\,\text{m} \cdot 4\,\text{m}}$$

Evaluate Formula

5) Semi Major Axis of Elliptic Cylinder given Volume Formula

Formula

$$a = \frac{V}{\pi \cdot h \cdot b}$$

Example with Units

$$3.9789\,\text{m} = \frac{125\,\text{m}^3}{3.1416 \cdot 5\,\text{m} \cdot 2\,\text{m}}$$

Evaluate Formula

6) Semi Minor Axis of Elliptic Cylinder given Volume Formula

Formula

$$b = \frac{V}{\pi \cdot h \cdot a}$$

Example with Units

$$1.9894\,\text{m} = \frac{125\,\text{m}^3}{3.1416 \cdot 5\,\text{m} \cdot 4\,\text{m}}$$

Evaluate Formula

7) Surface to Volume Ratio of Elliptic Cylinder Formula ↗

Formula

$$R_{A/V} = \frac{LSA + (2 \cdot \pi \cdot b \cdot a)}{\pi \cdot h \cdot b \cdot a}$$

Example with Units

$$1.156\,\text{m}^{-1} = \frac{95\,\text{m}^2 + (2 \cdot 3.1416 \cdot 2\,\text{m} \cdot 4\,\text{m})}{3.1416 \cdot 5\,\text{m} \cdot 2\,\text{m} \cdot 4\,\text{m}}$$

8) Surface to Volume Ratio of Elliptic Cylinder given Lateral Surface Area and Semi Major Axis Formula ↗

Formula

$$R_{A/V} = \frac{LSA + \left(2 \cdot \pi \cdot \left(\frac{LSA}{\pi \cdot h} - a\right) \cdot a\right)}{\pi \cdot h \cdot \left(\frac{LSA}{\pi \cdot h} - a\right) \cdot a}$$

Example with Units

$$1.1383\,\text{m}^{-1} = \frac{95\,\text{m}^2 + \left(2 \cdot 3.1416 \cdot \left(\frac{95\,\text{m}^2}{3.1416 \cdot 5\,\text{m}} - 4\,\text{m}\right) \cdot 4\,\text{m}\right)}{3.1416 \cdot 5\,\text{m} \cdot \left(\frac{95\,\text{m}^2}{3.1416 \cdot 5\,\text{m}} - 4\,\text{m}\right) \cdot 4\,\text{m}}$$

9) Surface to Volume Ratio of Elliptic Cylinder given Volume and Semi Minor Axis Formula ↗

Formula

$$R_{A/V} = \frac{LSA + \frac{2 \cdot V}{h}}{V}$$

Example with Units

$$1.16\,\text{m}^{-1} = \frac{95\,\text{m}^2 + \frac{2 \cdot 125\,\text{m}^3}{5\,\text{m}}}{125\,\text{m}^3}$$

10) Total Surface Area of Elliptic Cylinder Formula ↗

Formula

$$TSA = \pi \cdot (((b + a) \cdot h) + (2 \cdot b \cdot a))$$

Example with Units

$$144.5133\,\text{m}^2 = 3.1416 \cdot (((2\,\text{m} + 4\,\text{m}) \cdot 5\,\text{m}) + (2 \cdot 2\,\text{m} \cdot 4\,\text{m}))$$

11) Total Surface Area of Elliptic Cylinder given Lateral Surface Area Formula ↗

Formula

$$TSA = LSA + (2 \cdot \pi \cdot b \cdot a)$$

Example with Units

$$145.2655\,\text{m}^2 = 95\,\text{m}^2 + (2 \cdot 3.1416 \cdot 2\,\text{m} \cdot 4\,\text{m})$$

12) Volume of Elliptic Cylinder Formula ↗

Formula

$$V = \pi \cdot h \cdot b \cdot a$$

Example with Units

$$125.6637\,\text{m}^3 = 3.1416 \cdot 5\,\text{m} \cdot 2\,\text{m} \cdot 4\,\text{m}$$

13) Volume of Elliptic Cylinder given Lateral Surface Area and Semi Major Axis Formula ⬀

Formula

$$V = \pi \cdot h \cdot a \cdot \left(\frac{LSA}{\pi \cdot h} - a \right)$$

Example with Units

$$128.6726\,\text{m}^3 = 3.1416 \cdot 5\,\text{m} \cdot 4\,\text{m} \cdot \left(\frac{95\,\text{m}^2}{3.1416 \cdot 5\,\text{m}} - 4\,\text{m} \right)$$

Variables used in list of Important Formulas of Elliptic Cylinder above

- **a** Semi Major Axis of Elliptic Cylinder *(Meter)*
- **b** Semi Minor Axis of Elliptic Cylinder *(Meter)*
- **h** Height of Elliptic Cylinder *(Meter)*
- **LSA** Lateral Surface Area of Elliptic Cylinder *(Square Meter)*
- **$R_{A/V}$** Surface to Volume Ratio of Elliptic Cylinder *(1 per Meter)*
- **TSA** Total Surface Area of Elliptic Cylinder *(Square Meter)*
- **V** Volume of Elliptic Cylinder *(Cubic Meter)*

Constants, Functions, Measurements used in list of Important Formulas of Elliptic Cylinder above

- constant(s): **pi**, 3.14159265358979323846264338327950288 *Archimedes' constant*
- 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: **Reciprocal Length** in 1 per Meter (m⁻¹) *Reciprocal Length Unit Conversion* 📤

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