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Important Formulas of Cylinder

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List of 29 Important Formulas of Cylinder

Important Formulas of Cylinder

Diagonal of Cylinder

1) Diagonal of Cylinder

Open Calculator

fx $$d = \sqrt{h^2 + (2 \cdot r)^2}$$

ex $$15.6205\text{m}^2 = \sqrt{(12\text{m})^2 + (2 \cdot 5\text{m})^2}$$

2) Diagonal of Cylinder given Lateral Surface Area and Height

Open Calculator

fx $$d = \sqrt{h^2 + \left(\frac{LSA}{\pi \cdot h}\right)^2}$$

ex $$15.67171\text{m}^2 = \sqrt{(12\text{m})^2 + \left(\frac{380\text{m}^2}{\pi \cdot (12\text{m})}\right)^2}$$

3) Diagonal of Cylinder given Total Surface Area and Radius

Open Calculator

fx $$d = \sqrt{\left(\frac{TSA}{2 \cdot \pi \cdot r} - r\right)^2 + (2 \cdot r)^2}$$

ex $$15.52118\text{m}^2 = \sqrt{\left(\frac{530\text{m}^2}{2 \cdot \pi \cdot 5\text{m}} - 5\text{m}\right)^2 + (2 \cdot 5\text{m})^2}$$

4) Diagonal of Cylinder given Volume and Height

Open Calculator

fx $$d = \sqrt{h^2 + \frac{4 \cdot V}{\pi \cdot h}}$$

ex $$15.61208\text{m}^2 = \sqrt{(12\text{m})^2 + \frac{4 \cdot 940\text{m}^3}{\pi \cdot (12\text{m})}}$$

Height of Cylinder

5) Height of Cylinder given Diagonal

Open Calculator

fx $$h = \sqrt{d^2 - (2 \cdot r)^2}$$

ex $$12.49\text{m} = \sqrt{(16\text{m}^2)^2 - (2 \cdot 5\text{m})^2}$$

6) Height of Cylinder given Lateral Surface Area

Open Calculator

$$h = \frac{LSA}{2 \cdot \pi \cdot r}$$

$$12.09578\text{m} = \frac{380\text{m}^2}{2 \cdot \pi \cdot 5\text{m}}$$

7) Height of Cylinder given Total Surface Area and Base Area

Open Calculator

$$h = \frac{TSA - 2 \cdot A_{Base}}{2 \cdot \pi \cdot r}$$

$$11.77747\text{m} = \frac{530\text{m}^2 - 2 \cdot 80\text{m}^2}{2 \cdot \pi \cdot 5\text{m}}$$

8) Height of Cylinder given Volume

Open Calculator

$$h = \frac{V}{\pi \cdot r^2}$$

$$11.96845\text{m} = \frac{940\text{m}^3}{\pi \cdot (5\text{m})^2}$$

Perimeter of Cylinder

9) Perimeter of Cylinder

Open Calculator

$$P = 2 \cdot (2 \cdot \pi \cdot r + h)$$

$$86.83185\text{m} = 2 \cdot (2 \cdot \pi \cdot 5\text{m} + 12\text{m})$$

10) Perimeter of Cylinder given Lateral Surface Area and Height

Open Calculator

fx $$P = 2 \cdot \left(\frac{LSA}{h} + h \right)$$

ex $$87.33333\text{m} = 2 \cdot \left(\frac{380\text{m}^2}{12\text{m}} + 12\text{m} \right)$$

11) Perimeter of Cylinder given Total Surface Area and Height

Open Calculator

fx $$P = 2 \cdot \left(\frac{TSA - 2 \cdot A_{Base}}{h} + h \right)$$

ex $$85.66667\text{m} = 2 \cdot \left(\frac{530\text{m}^2 - 2 \cdot 80\text{m}^2}{12\text{m}} + 12\text{m} \right)$$

12) Perimeter of Cylinder given Volume and Radius

Open Calculator

fx $$P = 2 \cdot \left(2 \cdot \pi \cdot r + \frac{V}{\pi \cdot r^2} \right)$$

ex $$86.76876\text{m} = 2 \cdot \left(2 \cdot \pi \cdot (5\text{m}) + \frac{940\text{m}^3}{\pi \cdot (5\text{m})^2} \right)$$

Radius of Cylinder

13) Radius of Cylinder given Lateral Surface Area

Open Calculator

fx $$r = \frac{LSA}{2 \cdot \pi \cdot h}$$

ex $$5.039907\text{m} = \frac{380\text{m}^2}{2 \cdot \pi \cdot 12\text{m}}$$

14) Radius of Cylinder given Total Surface Area and Base Area

Open Calculator

fx $$r = \frac{TSA - 2 \cdot A_{Base}}{2 \cdot \pi \cdot h}$$

ex $$4.907277\text{m} = \frac{530\text{m}^2 - 2 \cdot 80\text{m}^2}{2 \cdot \pi \cdot 12\text{m}}$$

15) Radius of Cylinder given Volume

Open Calculator

fx $$r = \sqrt{\frac{V}{\pi \cdot h}}$$

ex $$4.993423\text{m} = \sqrt{\frac{940\text{m}^3}{\pi \cdot 12\text{m}}}$$

Surface Area of Cylinder

16) Base Area of Cylinder

Open Calculator

fx $A_{Base} = \pi \cdot r^2$

ex $78.53982\text{m}^2 = \pi \cdot (5\text{m})^2$

17) Lateral Surface Area of Cylinder

Open Calculator

fx $LSA = 2 \cdot \pi \cdot r \cdot h$

ex $376.9911\text{m}^2 = 2 \cdot \pi \cdot 5\text{m} \cdot 12\text{m}$

18) Lateral Surface Area of Cylinder given Diagonal and Radius

Open Calculator

fx $LSA = 2 \cdot \pi \cdot r \cdot \sqrt{d^2 - (2 \cdot r)^2}$

ex $392.3848\text{m}^2 = 2 \cdot \pi \cdot 5\text{m} \cdot \sqrt{(16\text{m}^2)^2 - (2 \cdot 5\text{m})^2}$

19) Lateral Surface Area of Cylinder given Total Surface Area and Base Area

Open Calculator

fx $LSA = TSA - (2 \cdot A_{Base})$

ex $370\text{m}^2 = 530\text{m}^2 - (2 \cdot 80\text{m}^2)$

20) Lateral Surface Area of Cylinder given Volume and Radius

Open Calculator

fx $$\mathrm{LSA} = \frac{2 \cdot \mathrm{V}}{\mathrm{r}}$$

ex $$376\mathrm{m}^2 = \frac{2 \cdot 940\mathrm{m}^3}{5\mathrm{m}}$$

21) Total Surface Area of Cylinder

Open Calculator

fx $$\mathrm{TSA} = 2 \cdot \pi \cdot \mathrm{r} \cdot (\mathrm{h} + \mathrm{r})$$

ex $$534.0708\mathrm{m}^2 = 2 \cdot \pi \cdot 5\mathrm{m} \cdot (12\mathrm{m} + 5\mathrm{m})$$

22) Total Surface Area of Cylinder given Diagonal and Height

Open Calculator

fx $$\mathrm{TSA} = \pi \cdot \sqrt{\mathrm{d}^2 - \mathrm{h}^2} \cdot \left(\mathrm{h} + \frac{\sqrt{\mathrm{d}^2 - \mathrm{h}^2}}{2}\right)$$

ex $$574.8991\mathrm{m}^2 = \pi \cdot \sqrt{(16\mathrm{m}^2)^2 - (12\mathrm{m})^2} \cdot \left((12\mathrm{m}) + \frac{\sqrt{(16\mathrm{m}^2)^2 - (12\mathrm{m})^2}}{2}\right)$$

23) Total Surface Area of Cylinder given Lateral Surface Area and Base Area

Open Calculator

fx $$\mathrm{TSA} = \mathrm{LSA} + (2 \cdot \mathrm{A_{Base}})$$

ex $$540\mathrm{m}^2 = 380\mathrm{m}^2 + (2 \cdot 80\mathrm{m}^2)$$

24) Total Surface Area of Cylinder given Volume and Radius

Open Calculator

fx $$\mathrm{TSA} = 2 \cdot \pi \cdot \mathrm{r} \cdot \left(\frac{\mathrm{V}}{\pi \cdot \mathrm{r}^2} + \mathrm{r} \right)$$

ex $$533.0796\mathrm{m}^2 = 2 \cdot \pi \cdot (5\mathrm{m}) \cdot \left(\frac{940\mathrm{m}^3}{\pi \cdot (5\mathrm{m})^2} + (5\mathrm{m}) \right)$$

Volume of Cylinder

25) Volume of Cylinder

Open Calculator

fx $$\mathrm{V} = \pi \cdot \mathrm{r}^2 \cdot \mathrm{h}$$

ex $$942.4778\mathrm{m}^3 = \pi \cdot (5\mathrm{m})^2 \cdot 12\mathrm{m}$$

26) Volume of Cylinder given Base Area

Open Calculator

fx $$\mathrm{V} = \mathrm{A}_{\mathrm{Base}} \cdot \mathrm{h}$$

ex $$960\mathrm{m}^3 = 80\mathrm{m}^2 \cdot 12\mathrm{m}$$

27) Volume of Cylinder given Diagonal and Radius

Open Calculator

fx $$\mathrm{V} = \pi \cdot \mathrm{r}^2 \cdot \sqrt{\mathrm{d}^2 - (2 \cdot \mathrm{r})^2}$$

ex $$980.962\mathrm{m}^3 = \pi \cdot (5\mathrm{m})^2 \cdot \sqrt{(16\mathrm{m}^2)^2 - (2 \cdot (5\mathrm{m}))^2}$$

28) Volume of Cylinder given Lateral Surface Area and Height

Open Calculator

fx $$V = \frac{LSA^2}{4 \cdot \pi \cdot h}$$

ex $$957.5822\text{m}^3 = \frac{(380\text{m}^2)^2}{4 \cdot \pi \cdot 12\text{m}}$$

29) Volume of Cylinder given Total Surface Area and Height

Open Calculator

fx $$V = \frac{(TSA - 2 \cdot A_{Base})^2}{4 \cdot \pi \cdot h}$$

ex $$907.8463\text{m}^3 = \frac{(530\text{m}^2 - 2 \cdot 80\text{m}^2)^2}{4 \cdot \pi \cdot 12\text{m}}$$

Variables Used

- **A_{Base}** Base Area of Cylinder *(Square Meter)*
- **d** Diagonal of Cylinder *(Square Meter)*
- **h** Height of Cylinder *(Meter)*
- **LSA** Lateral Surface Area of Cylinder *(Square Meter)*
- **P** Perimeter of Cylinder *(Meter)*
- **r** Radius of Cylinder *(Meter)*
- **TSA** Total Surface Area of Cylinder *(Square Meter)*
- **V** Volume of Cylinder *(Cubic Meter)*

Constants, Functions, Measurements used

- Constant: **pi**, 3.14159265358979323846264338327950288
  Archimedes' constant
- Function: **sqrt**, sqrt(Number)
  Square root function
- Measurement: **Length** in Meter (m)
  Length Unit Conversion
- Measurement: **Volume** in Cubic Meter (m^3)
  Volume Unit Conversion
- Measurement: **Area** in Square Meter (m^2)
  Area Unit Conversion

Check other formula lists

- Anticube Formulas
- Antiprism Formulas
- Barrel Formulas
- Bent Cuboid Formulas
- Bicone Formulas
- Capsule Formulas
- Circular Hyperboloid Formulas
- Cuboctahedron Formulas
- Cut Cylinder Formulas
- Cut Cylindrical Shell Formulas
- Cylinder Formulas
- Cylindrical Shell Formulas
- Diagonally Halved Cylinder Formulas
- Disphenoid Formulas
- Double Calotte Formulas
- Double Point Formulas
- Ellipsoid Formulas
- Elliptic Cylinder Formulas
- Elongated Dodecahedron Formulas
- Flat End Cylinder Formulas
- Frustum of Cone Formulas
- Great Dodecahedron Formulas
- Great Icosahedron Formulas
- Great Stellated Dodecahedron Formulas
- Half Cylinder Formulas
- Half Spherical Shell Formulas
- Half Tetrahedron Formulas
- Hemisphere Formulas
- Hollow Cuboid Formulas
- Hollow Cylinder Formulas
- Hollow Frustum Formulas
- Hollow Pyramid Formulas
- Hollow Sphere Formulas
- Ingot Formulas
- Obelisk Formulas
- Oblique Cylinder Formulas
- Oblique Prism Formulas
- Obtuse Edged Cuboid Formulas
- Oloid Formulas
- Paraboloid Formulas
- Parallelepiped Formulas
- Prismatoid Formulas
- Ramp Formulas
- Regular Bipyramid Formulas
- Rhombohedron Formulas
- Right Wedge Formulas
- Semi Ellipsoid Formulas
- Sharp Bent Cylinder Formulas
- Small Stellated Dodecahedron Formulas
- Solid of Revolution Formulas
- Sphere Formulas

- **Spherical Cap Formulas**
- **Spherical Corner Formulas**
- **Spherical Ring Formulas**
- **Spherical Sector Formulas**
- **Spherical Segment Formulas**
- **Spherical Wedge Formulas**
- **Spherical Zone Formulas**
- **Square Pillar Formulas**
- **Stellated Octahedron Formulas**
- **Trirectangular Tetrahedron Formulas**
- **Truncated Rhombohedron Formulas**

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