



Important Formulas of Hollow Sphere

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Examples!

Conversions!

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List of 15 Important Formulas of Hollow Sphere

Important Formulas of Hollow Sphere 🗗

Radius of Hollow Sphere 2

1) Inner Radius of Hollow Sphere given Surface Area

$$\mathbf{r}_{\mathrm{Inner}} = \sqrt{rac{\mathrm{SA}}{4 \cdot \pi} - \mathrm{r}_{\mathrm{Outer}}^2}$$

Open Calculator

$$ext{ex} 5.93984 ext{m} = \sqrt{rac{1700 ext{m}^2}{4 \cdot \pi} - \left(10 ext{m}
ight)^2}$$

2) Inner Radius of Hollow Sphere given Thickness 🖸

fx
$$\left[{{
m{r}}_{Inner}} = {{
m{r}}_{Outer}} - {
m{t}}
ight]$$

Open Calculator 🗗

$$\mathbf{ex} \ 6\mathrm{m} = 10\mathrm{m} - 4\mathrm{m}$$

3) Inner Radius of Hollow Sphere given Volume

$$\mathbf{r}_{\mathrm{Inner}} = \left(\mathrm{r}_{\mathrm{Outer}}^3 - rac{3\cdot\mathrm{V}}{4\cdot\pi}
ight)^{rac{1}{3}}$$

Open Calculator

$$ext{ex} 5.964447 ext{m} = \left((10 ext{m})^3 - rac{3 \cdot 3300 ext{m}^3}{4 \cdot \pi}
ight)^{rac{1}{3}}$$





4) Outer Radius of Hollow Sphere given Surface Area

 ${f r}_{
m Outer} = \sqrt{rac{{
m SA}}{4\pi \pi}} - {
m r}_{
m Inner}^2$

1 Outer
$$-\sqrt{\frac{1}{4 \cdot \pi}} - 1_{\text{Inne}}$$

= $\sqrt{\frac{1700 \mathrm{m}^2}{4 \cdot \pi} - (6 \mathrm{m})^2}$

Open Calculator

5) Outer Radius of Hollow Sphere given Thickness 🗗

 $\mathbf{f}_{\mathbf{x}} | \mathbf{r}_{\mathrm{Outer}} = \mathbf{r}_{\mathrm{Inner}} + \mathbf{t}$

Open Calculator 2

- 10m = 6m + 4m

6) Outer Radius of Hollow Sphere given Volume

Open Calculator

 $\mathbf{r}_{\mathrm{Outer}} = \left(rac{3\cdot\mathrm{V}}{4\cdot\pi} + \mathrm{r}_{\mathrm{Inner}}^3
ight)^{rac{1}{3}}$ $ext{ex} 10.01271 ext{m} = \left(rac{3 \cdot 3300 ext{m}^3}{4 \cdot \pi} + (6 ext{m})^3
ight)^{rac{1}{3}}$

Surface Area of Hollow Sphere G

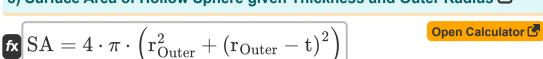
- 7) Surface Area of Hollow Sphere 🖸
- $ext{FA} | ext{SA} = 4 \cdot \pi \cdot (ext{r}_{ ext{Outer}}^2 + ext{r}_{ ext{Inner}}^2) |$

 $ext{ex} \ 1709.026 ext{m}^2 = 4 \cdot \pi \cdot \left((10 ext{m})^2 + (6 ext{m})^2
ight)$



Open Calculator

8) Surface Area of Hollow Sphere given Thickness and Outer Radius



$$ag{1709.026 ext{m}^2 = 4 \cdot \pi \cdot \left((10 ext{m})^2 + (10 ext{m} - 4 ext{m})^2
ight)}$$

9) Surface Area of Hollow Sphere given Volume and Inner Radius

$$ag{SA} = 4 \cdot \pi \cdot \left(\left(rac{3 \cdot ext{V}}{4 \cdot \pi} + ext{r}_{ ext{Inner}}^3
ight)^{rac{2}{3}} + ext{r}_{ ext{Inner}}^2
ight)$$
 Open Calculator $extstyle ext{C}$

$$extbf{ex} 1712.222 ext{m}^2 = 4 \cdot \pi \cdot \left(\left(rac{3 \cdot 3300 ext{m}^3}{4 \cdot \pi} + (6 ext{m})^3
ight)^{rac{2}{3}} + (6 ext{m})^2
ight)$$

Thickness of Hollow Sphere C

10) Thickness of Hollow Sphere

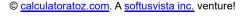
fx
$$\mathrm{t} = \mathrm{r_{Outer}} - \mathrm{r_{Inner}}$$

$$4m = 10m - 6m$$

$$ag{t} = \sqrt{rac{ ext{SA}}{4 \cdot \pi} - ext{r}_{ ext{Inner}}^2 - ext{r}_{ ext{Inner}}}$$

$$=$$
 $\sqrt{rac{1700 ext{m}^2}{4 \cdot \pi}} - (6 ext{m})^2 - 6 ext{m}$







Open Calculator

Open Calculator

12) Thickness of Hollow Sphere given Volume and Outer Radius

 $t =
m{r_{Outer}} - \left(
m{r_{Outer}^3} - rac{3 \cdot V}{4 \cdot \pi}
ight)^{rac{1}{3}}$

Open Calculator 🗗

 $= 4.035553 \text{m} = 10 \text{m} - \left((10 \text{m})^3 - \frac{3 \cdot 3300 \text{m}^3}{4 \cdot \pi} \right)^{\frac{1}{3}}$

Volume of Hollow Sphere

13) Volume of Hollow Sphere

 $V = rac{4}{3} \cdot \pi \cdot \left(\mathrm{r_{Outer}^3 - r_{Inner}^3}
ight)$

Open Calculator

 $oxed{ex} 3284.012 \mathrm{m}^{_3} = rac{4}{3} \cdot \pi \cdot \left(\left(10 \mathrm{m}
ight)^3 - \left(6 \mathrm{m}
ight)^3
ight)$

14) Volume of Hollow Sphere given Surface Area and Outer Radius

 $\left| \mathbf{V} = rac{4}{3} \cdot \pi \cdot \left(\mathbf{r}_{\mathrm{Outer}}^3 - \left(rac{\mathrm{SA}}{4 \cdot \pi} - \mathbf{r}_{\mathrm{Outer}}^2
ight)^{rac{3}{2}}
ight)
ight|$

Open Calculator 🚰



15) Volume of Hollow Sphere given Thickness and Inner Radius 🗗



 $extbf{V} = rac{4}{3} \cdot \pi \cdot \left(\left(ext{r}_{ ext{Inner}} + ext{t}
ight)^3 - ext{r}_{ ext{Inner}}^3
ight)^3$

$$oxed{ex} 3284.012 \mathrm{m}^{_3} = rac{4}{3} \cdot \pi \cdot \left((6\mathrm{m} + 4\mathrm{m})^3 - (6\mathrm{m})^3
ight)$$



Variables Used

- **r**_{Inner} Inner Radius of Hollow Sphere (Meter)
- router Outer Radius of Hollow Sphere (Meter)
- **SA** Surface Area of Hollow Sphere (Square Meter)
- **t** Thickness of Hollow Sphere (Meter)
- **V** Volume of Hollow Sphere (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 (m³)

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

 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 Tetrahedron Formulas
- Hemisphere Formulas
- Hollow Cuboid Formulas
- Hollow Cylinder Formulas
- Hollow Frustum Formulas
- Hollow Hemisphere 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 💪
- Skewed Three Edged Prism 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
- Star Pyramid Formulas
- Stellated Octahedron Formulas
- Toroid Formulas
- Torus Formulas
- Trirectangular Tetrahedron
 Formulas
- Truncated Rhombohedron Formulas

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