

NAME: _____

P.I. G.G.14: Apply the properties of a cylinder, including lateral area of a right circular cylinder equals the product of an altitude and the circumference of the base

1. Compare the quantity in Column A with the quantity in Column B.

Column A

the lateral area of a cylinder
with $r = 6$ and $h = 4$

Column B

the lateral area of a cylinder
with $r = 4$ and $h = 9$

- [A] The quantity in Column A is greater. [B] The quantity in Column B is greater.
[C] The two quantities are equal.
[D] The relationship cannot be determined on the basis of the information supplied.

P.I. G.G.15: Apply the properties of a right circular cone, including lateral area equals one-half the product of the slant height and the circumference of the base

2. The lateral area of a cone is $20\pi \text{ in.}^2$. If the radius is 10 in., find the slant height.

- [A] 0.5 in. [B] 2.0π in. [C] 2.0 in. [D] 0.5π in.

3. Find the lateral area and surface area of an equilateral triangle base right prism with base edge 5 and height 9.

P.I. G.G.16: Apply the properties of a sphere, including surface area is $4 \times \pi \times \text{radius}^2$

4. Find the surface area of a sphere that has a diameter of 10 centimeters. Express your answer in terms of π .
5. A sphere has a radius of 9 centimeters. Find the volume and surface area of the sphere.
6. A sphere has a volume of 7776π cubic inches. Find the surface area of the sphere.
7. Find a shortcut for determining the surface area of a sphere if you know its volume.

[1] B

[2] C

[3] Lateral area: 135, Surface area: $135 + \frac{25}{2}\sqrt{3}$

[4] $100\pi \text{ cm}^2$

[5] $972\pi \text{ cm}^3$, $324\pi \text{ cm}^2$

[6] 1296π square inches

Because the ratio of the volume to the surface area of a sphere is $\frac{4}{3}\pi r^2 : 4\pi r^2$, or $\frac{r}{3}$, you can divide

[7] the volume by the quantity $\frac{r}{3}$ to find the surface area.