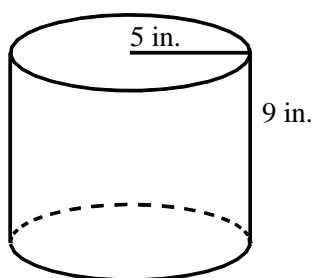


P.I. A.G.2: Use formulas to calculate volume and surface area of rectangular solids and cylinders

1. The formula for the volume of a cylinder is $V = \pi r^2 h$. Write an expression for the volume of a cylinder in which $r = 6x^4$. Use 3.14 for π .

2. Find the volume of the cylinder. (not drawn to scale)



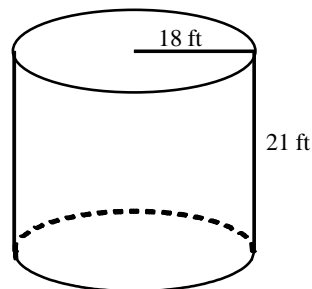
- [A] $54\pi \text{ in.}^3$ [B] $225\pi \text{ in.}^2$
 [C] $45\pi \text{ in.}^3$ [D] $225\pi \text{ in.}^3$

3. What is the volume of a can of soup that has a height of 16 cm and a diameter of 8 cm?

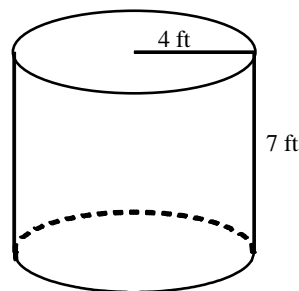
4. Cylinder A has radius 1 and height 4 and cylinder B has radius 2 and height 4. The ratio of the volumes of the two cylinders is

- [A] 1:4 [B] 1:2 [C] 1:1
 [D] 5:6 [E] cannot be determined

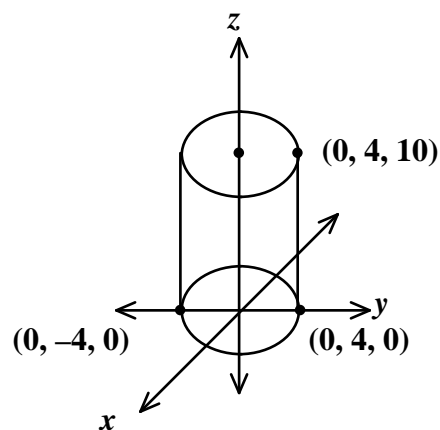
5. Find the volume of the cylinder. Use 3.14 for π .



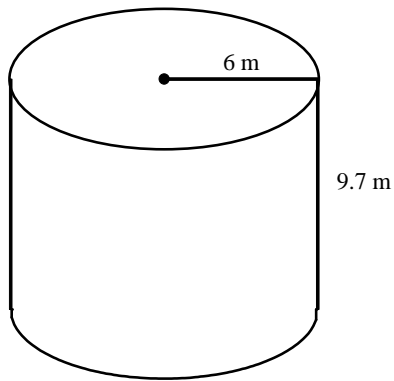
6. Find the volume of the cylinder. Use 3.14 for π .



7. Find the volume of the cylinder shown. Leave your answer in terms of π .



8. Find the surface area of the cylinder to the nearest square unit. (Use $\pi = 3.14$.)

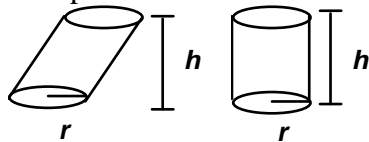


- [A] 58 m^2 [B] 592 m^2 [C] 296 m^2 [D] 94 m^2

9. Determine which of these cylinders has the largest surface area.

- [A] a cylinder with a height of 8 cm and a base with a radius of 3 cm
 [B] a cylinder with a height of 4 cm and a base with a radius of 8 cm
 [C] a cylinder with a height of 8 cm and a base with a radius of 4 cm
 [D] a cylinder with a height of 6 cm and a base with a radius of 3 cm

10. Compare the surface areas of the two cylinders shown. Justify your answer.



11. The surface area of a cylinder is 28.64 cm^2 . The radius of the base is doubled. The surface area of the new cylinder is

- [A] doubled [B] tripled [C] quadrupled [D] the same
 [E] Not enough information is given to determine the amount of change in the surface area.

12. Make a table showing the surface area and height of five different cylinders with radii 2, 3, 4, 5, and 6, if the volume of each cylinder is 144π . Which cylinder has the least surface area?

Integrated Algebra Practice: A.G.2 #2

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[1] $113.04x^8h$ _____

[2] D _____

[3] 803.84 cm^3 _____

[4] A _____

[5] $21,364.56 \text{ ft}^3$ _____

[6] 351.68 ft^3 _____

[7] $160\pi \text{ cu units}$ _____

[8] B _____

[9] B _____

They are the same, because the lateral area of each is $2\pi rh$ and the bases have the same

[10] area as well. _____

[11] E _____

r	2	3	4	5	6
h	36	16	9	5.76	4
SA	152π	114π	104π	107.6π	120π

The cylinder that has the least surface area is

[12] the one with radius 4 and height 9. _____