

Grade 8 - Volume of Cylinders, Cones and Spheres - Quiz

Common Core 8.G.C.9 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

Pick the best answer for each of the 10 questions about the volume of cylinders, cones and spheres and solving real-world volume problems (Common Core 8.G.C.9). Read each question carefully, then read the explanation to learn from any mistake.

Grade 8 · Common Core State Standards: **8.G.C.9**

Questions

Question 1

What is the volume of a cylinder with radius 2 and height 5?

- A. 10π
- B. 60π
- C. 20π
- D. 100π

Question 2

What is the volume of a cone with radius 3 and height 4?

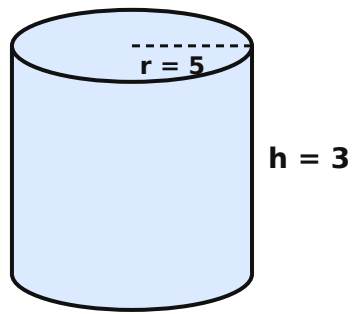
- A. 36π
- B. 12π
- C. 48π
- D. 4π

Question 3

What is the volume of a sphere with radius 3?

- A. 12π
- B. 108π
- C. 36π
- D. 27π

Question 4



A cylinder.

What is the volume of the cylinder?

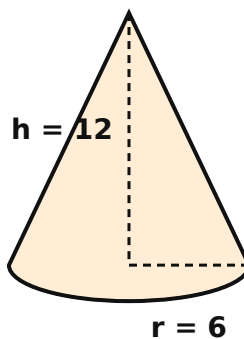
- A. 75π
- B. 15π
- C. 30π
- D. 225π

Question 5

A cone and a cylinder have the same base and height. The cone's volume is

- A. one third of the cylinder's
- B. half of the cylinder's
- C. equal to the cylinder's
- D. three times the cylinder's

Question 6



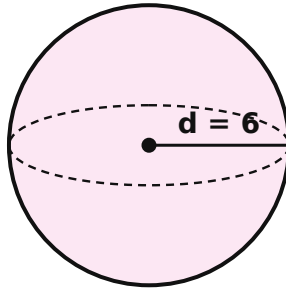
A cone.

What is the volume of the cone?

- A. 432π
- B. 72π

- C. 36π
- D. 144π

Question 7



A sphere with diameter 6.

What is the volume of this sphere?

- A. 288π
- B. 36π
- C. 12π
- D. 72π

Question 8

A cylinder has volume 48π and radius 4. What is its height?

- A. 12
- B. 3
- C. 6
- D. 1.5

Question 9

A sphere's radius is doubled. Its volume is multiplied by

- A. 2
- B. 4
- C. 6
- D. 8

Question 10

A cylindrical can has radius 3 in and height 5 in. Using 3.14, what is its volume?

- A. 141.3 in^3
- B. 47.1 in^3

- C. 94.2 in^3
- D. 282.6 in^3

Answers

1. **C** - $V = \pi \times 4 \times 5 = 20 \pi$. Using the diameter gives wrong values.
2. **B** - $(1/3) \times \pi \times 9 \times 4 = 12 \pi$. Forgetting the $1/3$ gives 36π .
3. **C** - $(4/3) \times \pi \times 27 = 36 \pi$.
4. **A** - $\pi \times 25 \times 3 = 75 \pi$.
5. **A** - A cone fits into a cylinder three times.
6. **D** - $(1/3) \times \pi \times 36 \times 12 = 144 \pi$.
7. **B** - The radius is 3, so $V = (4/3) \pi \times 27 = 36 \pi$. Using 6 as the radius gives 288π .
8. **B** - $48 \pi = 16 \pi h$, so $h = 3$.
9. **D** - Volume depends on r cubed, and 2 cubed is 8.
10. **A** - $3.14 \times 9 \times 5 = 141.3$.

Remember

- Cylinder: $V = \pi r^2 h$.
- Cone: $V = \frac{1}{3} \pi r^2 h$, one third of the matching cylinder.
- Sphere: $V = \frac{4}{3} \pi r^3$; hemisphere: $\frac{2}{3} \pi r^3$.
- Radius is half the diameter; cube or square the radius before multiplying.
- Doubling the radius multiplies cylinder volume by 4 and sphere volume by 8.