

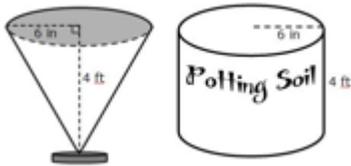
REVIEW – Volume and Surface Area Test**Due: Thursday, January 24, 2019**

- 1) A cylinder and its dimensions are shown below.



One equation for calculating the volume of a cylinder is $V=Bh$, where B represents the area of the base of cylinder. Which expression can be used to find the value of B , in square centimeters, for this cylinder?

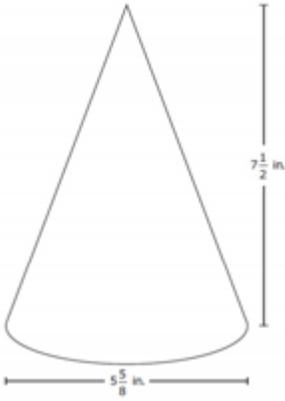
- A) $\pi(12.1)^2$
 B) $2\pi(12.1)$
 C) $\pi(3.8)^2$
 D) None of these
- 2) Brandon wants to plant tulips in the cone-shaped planter he bought for his mom. His favorite brand of potting soil is sold in a cylindrical container that is 4 feet tall with a radius of 6 inches.



How many cone-shaped planters could Brandon use so that he uses up all of the soil in the cylindrical container?

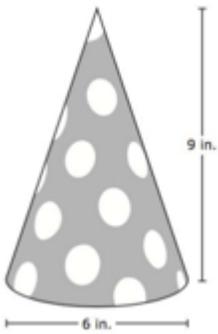
- A) 2
 B) 3
 C) 9
 D) 1
- 3) A storage container for oil is in the shape of a cylinder with a diameter of 10 ft and a height of 17 ft. Which measurement is closest to the volume of the storage container in cubic feet?
- A) 534 ft^3
 B) $1,335 \text{ ft}^3$
 C) 691 ft^3
 D) $1,696 \text{ ft}^3$
- 4) A paper drinking cup in the shape of a cone has a height of 10 centimeters and a diameter of 8 centimeters. Which of the following is closest to the volume of the cup in cubic centimeters?
- A) 167 cm^3
 B) 209 cm^3
 C) 670 cm^3
 D) 502 cm^3

- 5) A cone and its dimensions are shown in the diagram.



Which measurement is closest to the volume of the cone in cubic inches?

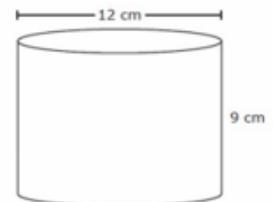
- A) 186.38 in^3
 - B) 248.50 in^3
 - C) 745.51 in^3
 - D) 62.13 in^3
- 6) A party hat is shaped like a cone. The dimensions of the party hat are shown in the diagram.



Which measurement is closest to the volume of the party hat in cubic inches?

- A) 84.82 in^3
 - B) 339.29 in^3
 - C) 254.47 in^3
 - D) $1,017.88 \text{ in}^3$
- 7) Sadie used a container shaped like a cylinder to catch rainwater. The dimensions of the container are shown below. Which measurement is closest to the volume of the container in cubic centimeters?

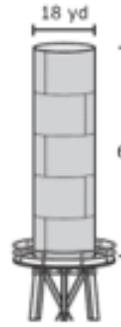
- A) $1,527 \text{ cm}^3$
- B) $4,072 \text{ cm}^3$
- C) $1,018 \text{ cm}^3$
- D) $3,054 \text{ cm}^3$



- 8) A ball shaped like a sphere has a radius of approximately $2\frac{1}{8}$ inches. Which of the following is the best estimate of the volume of the ball?
- A) 32 in^3
 - B) 11 in^3
 - C) 25 in^3
 - D) 17 in^3

Use the information and diagram below to complete questions 9 and 10.

The dimensions of a cylindrical water tank are shown.



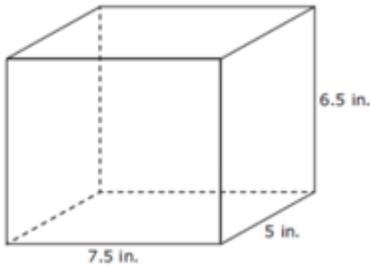
9) What is the total surface area of the water tank?

- A) $2808\pi \text{ yd}^2$
- B) $2160\pi \text{ yd}^2$
- C) $1242\pi \text{ yd}^2$
- D) $1808\pi \text{ yd}^2$

10) How would the lateral surface area compare to the total surface area?

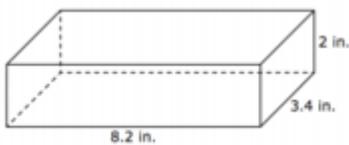
- A) The lateral surface area would be greater than the total surface area because you have to add in the area of the side of the cylinder, which is $2\pi rh$.
- B) The lateral surface area would be less than the total surface area because you have to subtract the area of the side of the cylinder, which is $2\pi rh$.
- C) The lateral surface area would be less than the total surface area because you have to subtract the area of the bases, which is $2\pi r^2$.
- D) The lateral surface area would be greater than the total surface area because you have to add the area of the bases, which is $2\pi r^2$.

11) A rectangular prism and its dimensions are shown in the diagram.



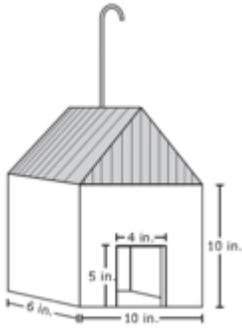
What is the total surface area of this prism in square inches?

12) A rectangular prism and its dimensions are shown in this diagram.



What is the lateral surface area of the prism in square inches?

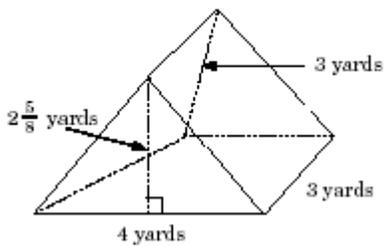
13) Sakura has a birdhouse with rectangular walls, a rectangular bottom, and a rectangular entry, like the one modeled below.



She will paint the four outside walls but not the bottom or the roof of the birdhouse. What is the area that Sakura will paint?

- A) 320 in^2
- B) 160 in^2
- C) 300 in^2
- D) 140 in^2

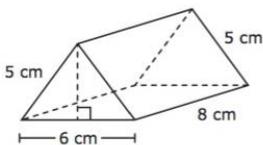
14) A pup tent has a canvas floor as well as canvas sides.



About how much canvas will be needed to construct the tent?

- A) 31.8 yd^2
- B) 40.5 yd^2
- C) 51.6 yd^2
- D) 43.8 yd^2

15) A triangular prism and its dimensions are shown in the diagram.



What is the lateral surface area of this triangular prism in square centimeters?

- A) 192 cm^2
- B) 128 cm^2
- C) 152 cm^2
- D) 144 cm^2

16) $4b + 2 = 3b - 1$