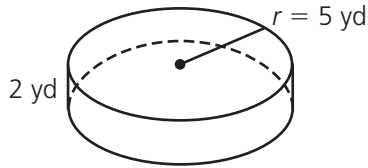


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LESSON 16 Surface Area of Cylinders

The surface area of a **cylinder** is the sum of the areas of the two circular bases plus the area of the curved surface.



What is the surface area of this cylinder?

$$SA = 2\pi r^2 + 2\pi rh$$

$$SA = 2\pi 5^2 + 2\pi(5)(2)$$

$$SA = 50\pi + 20\pi = 70\pi \text{ yd}^2$$

Area of a circle:

$$A = \pi r^2$$

Circumference of a circle:

$$C = 2\pi r$$

Surface area of a cylinder:

$$SA = 2\pi r^2 + 2\pi rh$$

Read each problem. Circle the letter of the best answer.

- 1** A wax candle is shaped like a cylinder. Its diameter is 6 centimeters and its height is 8 centimeters. What is the approximate surface area of this candle?

- A** 150.72 cm² **C** 376.8 cm²
B 207.24 cm² **D** 414.48 cm²

Since the diameter of the candle is 6 centimeters, the radius is half that, or 3 centimeters. Substitute $r = 3$, $h = 8$, and $\pi \approx 3.14$ into the formula $SA = 2\pi r^2 + 2\pi rh$. You get $SA = 2(3.14)(3)^2 + 2(3.14)(3)(8) = 56.52 + 150.72 = 207.24$. The correct answer is B.

- 2** What is the approximate surface area of the cylinder shown below?

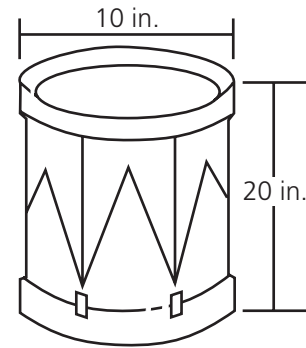


- A** 1.1304 m²
B 2.2608 m²
C 3.768 m²
D 7.536 m²

- 3** A spice jar is shaped like a cylinder. The jar has a diameter of 2 inches and a height of 4 inches. What is the surface area of the spice jar?

- A** $8\pi \text{ in.}^2$ **C** $16\pi \text{ in.}^2$
B $10\pi \text{ in.}^2$ **D** $24\pi \text{ in.}^2$

- 4** A cylindrical drum is shown below.



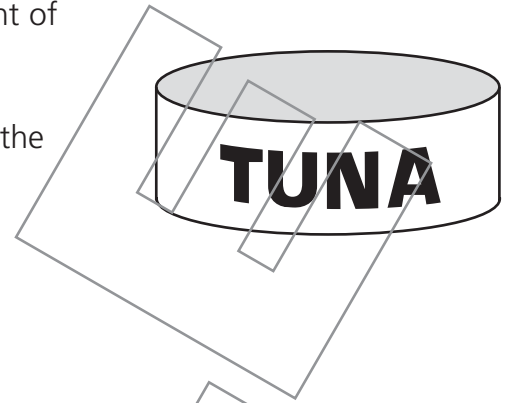
What is the approximate surface area of the drum?

- A** 785 in.²
B 1,256 in.²
C 1,570 in.²
D 1,884 in.²

Read each problem. Write your answers.

5 A can of tuna has a diameter of 8 centimeters and a height of 4 centimeters.

A What is the approximate area of the label surrounding the tuna can?

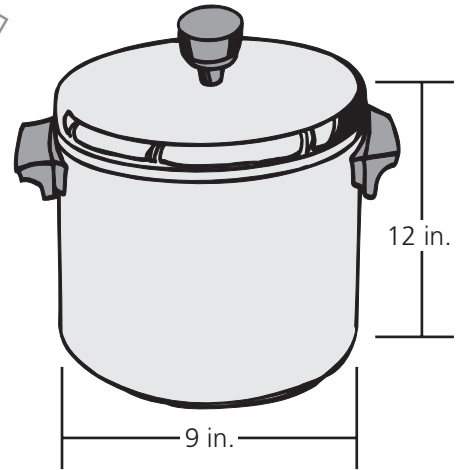


Answer: _____

B Explain how you found your answer.

6 A metal pot is shaped like a cylinder.

A To the nearest square inch, what is the area of the bottom of the metal pot?



Answer: _____

B To the nearest square inch, what is the total surface area of the metal pot, not including the lid?

Answer: _____

C Explain how you found your answer to part B.
