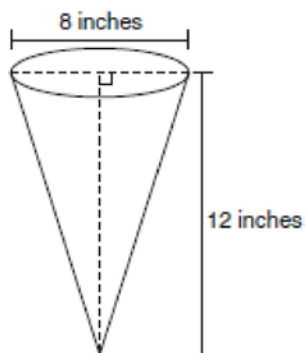


**G.G.15: Volume and Lateral Area: Apply the properties of a right circular cone, including volume is one-third the product of the area of its base and its altitude**

- 1 In the diagram below, a right circular cone has a diameter of 8 inches and a height of 12 inches.

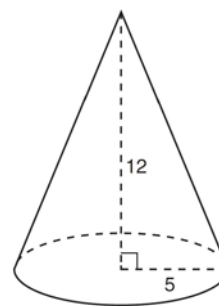


What is the volume of the cone to the *nearest cubic inch*?

- 1) 201
  - 2) 481
  - 3) 603
  - 4) 804
- 2 A paper container in the shape of a right circular cone has a radius of 3 inches and a height of 8 inches. Determine and state the number of cubic inches in the volume of the cone, in terms of  $\pi$ .
- 3 The lateral area of a right circular cone is equal to  $120\pi \text{ cm}^2$ . If the base of the cone has a diameter of 24 cm, what is the length of the slant height, in centimeters?
- 1) 2.5
  - 2) 5
  - 3) 10
  - 4) 15.7

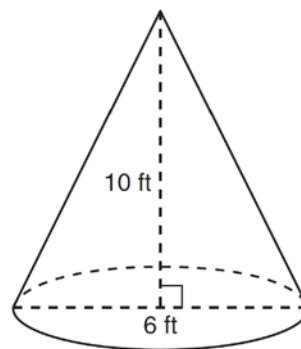
- 4 A right circular cone has a base with a radius of 15 cm, a vertical height of 20 cm, and a slant height of 25 cm. Find, in terms of  $\pi$ , the number of square centimeters in the lateral area of the cone.

- 5 As shown in the diagram below, a right circular cone has a height of 12 and a radius of 5.

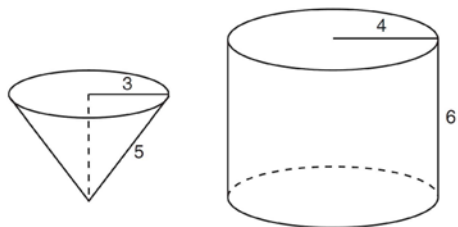


Determine, in terms of  $\pi$ , the lateral area of the right circular cone.

- 6 A right circular cone has an altitude of 10 ft and the diameter of the base is 6 ft as shown in the diagram below. Determine and state the lateral area of the cone, to the *nearest tenth of a square foot*.



- 7 In the diagram below, a right circular cone with a radius of 3 inches has a slant height of 5 inches, and a right cylinder with a radius of 4 inches has a height of 6 inches.



Determine and state the number of full cones of water needed to completely fill the cylinder with water.

**G.G.15: Volume and Lateral Area: Apply the properties of a right circular cone, including volume is one-third the product of the area of its base and its altitude**

**Answer Section**

1 ANS: 1

$$V = \frac{1}{3} \pi r^2 h = \frac{1}{3} \pi \cdot 4^2 \cdot 12 \approx 201$$

REF: 060921ge

2 ANS:

$$V = \frac{1}{3} \pi (3^2)(8) = 24\pi$$

REF: 081530ge

3 ANS: 3

$$120\pi = \pi(12)(l)$$

$$10 = l$$

REF: 081314ge

4 ANS:

$$375\pi \quad L = \pi r l = \pi(15)(25) = 375\pi$$

REF: 081030ge

5 ANS:

$$l = \sqrt{12^2 + 5^2} = \sqrt{169} = 13 \quad L = \pi r l = \pi(5)(13) = 65\pi$$

REF: 061531ge

6 ANS:

$$l = \sqrt{10^2 + 3^2} = \sqrt{109} \quad L = \pi r l = \pi(3)(\sqrt{109}) \approx 98.4$$

REF: 081436ge

7 ANS:

$$h = \sqrt{5^2 - 3^2} = 4 \quad V = \frac{1}{3} \pi \cdot 3^2 \cdot 4 = 12\pi \quad V = \pi \cdot 4^2 \cdot 6 = 96\pi \quad \frac{96\pi}{12\pi} = 8$$

REF: 011537ge