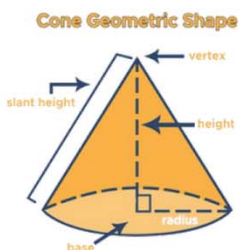


Name :

Class :

Surface Area of Cones



The Surface area of a cone is the total area covered by its surface these formula as given in figure.

A Closed Cone	An Open Cone
Area $\pi r (r + \sqrt{r^2 + h^2})$	Area $\pi r \sqrt{r^2 + h^2}$

Calculate the surface area for each cone.

CONE	WORKING OUT	AREA
<p>1)</p> <p>CLOSED CONE</p>	<p>Diameter of circle = 12 cm. Radius of circle = $12 \div 2 = 6$ cm Area of closed cone = $\pi r (r + \sqrt{r^2 + h^2})$ $= \pi(6)(6 + \sqrt{6^2 + 12^2}) = 6\pi (6 + \sqrt{36 + 100})$ $= 6\pi (6 + \sqrt{136}) = 6\pi(6 + 11.662...)$ $= 6\pi(17.662...) = 105.971... \pi$ $= 332.92 \text{ cm}^2$ to 1 decimal place</p>	332.92 cm ²
<p>2)</p> <p>OPEN CONE</p>	<p>Area of open cone = $\pi r \sqrt{r^2 + h^2}$ $= \pi(3) \sqrt{3^2 + 7 \frac{1}{2}^2} = 3\pi \sqrt{9 + 56 \frac{1}{4}}$ $= 3\pi \sqrt{65 \frac{1}{4}} = 3\pi(8.0777...)$ $= 24.233... \pi$ $= 76.13 \text{ in}^2$ to 2 decimal places</p>	76.13 in ²
<p>3)</p> <p>CLOSED CONE</p>	<p>Diameter of circle = 1.4 m. Radius of circle = $1.4 \div 2 = 0.7$ m Area of closed cone = $\pi r (r + \sqrt{r^2 + h^2})$ $= \pi(0.7)(0.7 + \sqrt{0.7^2 + 1.8^2})$ $= 0.7\pi (0.7 + \sqrt{0.49 + 3.24})$ $= 0.7\pi (0.7 + \sqrt{3.73}) = 0.7\pi(2.631...)$ $= 1.8419... \pi$ $= 5.79 \text{ m}^2$ to 1 decimal place</p>	5.79 m ²
<p>4)</p> <p>OPEN CONE</p>	<p>Diameter of circle = 16 cm. Radius of circle = $16 \div 2 = 8$ cm Area of open cone = $\pi r \sqrt{r^2 + h^2}$ $= \pi(8) \sqrt{8^2 + 15^2} = 8\pi \sqrt{64 + 225}$ $= 8\pi \sqrt{289} = 8\pi(17)$ $= 136 \pi$ $= 427.26 \text{ cm}^2$ to 2 decimal places</p>	427.26 cm ²