

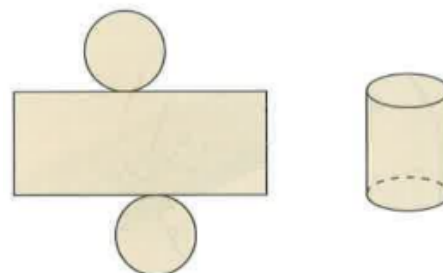
Lesson #3: Cones and Cylinders

Learning Goal: We are learning to calculate the surface area and volume of cylinders and cones.

Important Formulas

Surface area of a cylinder = area of the rectangle + 2x area of circular base

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

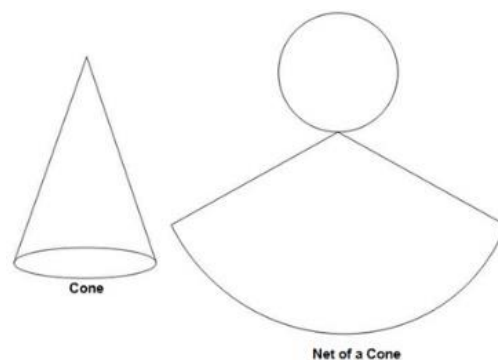


Volume of a cylinder = area of the base × height

$$V = \pi r^2 h$$

Surface area of a cone = lateral area + area of the circular base

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



Cones are tricky because you need to know the slant height. Which means, we will need the Pythagorean theorem!!!

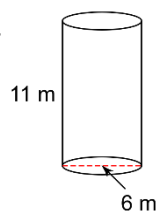
$$s^2 = r^2 + h^2$$

Volume of a cylinder = $\frac{1}{3}$ the volume of a cylinder with the same base!

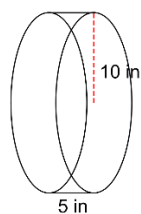
$$V = \frac{1}{3} \pi r^2 h \quad \text{OR} \quad V = \frac{\pi r^2 h}{3}$$

For each figure, draw the net, then calculate the surface area and the volume.

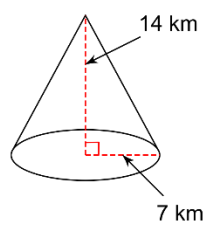
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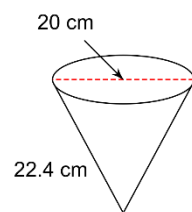
2.



3.



4.



Use the appropriate formula to solve for the missing measurement.

5. A Cylinder has a volume of 2769.48cm^3 with a height of 18cm . What is the length of the radius?

Success Criteria

- I can draw the net of a cylinder or cone
- I can use the appropriate formula to find the surface area or volume of a cone or cylinder
- If given the volume of a cone or cylinder, I can rearrange the equation to find the radius or height.