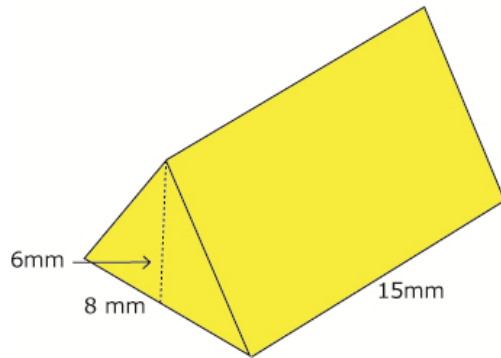


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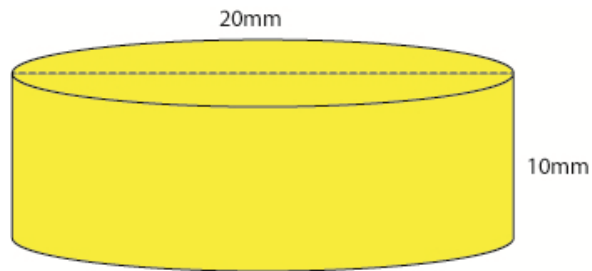
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## Volume of Cylinders and Pyramids Lesson- Step-by-Step Lesson

a. What is the volume?



b. What is the volume of this cylinder? Use  $\pi \approx 3.14$ .



### Explanation:

a. Step 1) Volume of a triangular prism:

$$\text{Volume} = \frac{1}{2} \times \text{base} \times \text{height} \times \text{length}$$

Step 2) Find the base, height, and length of the triangular prism.

base: 8 mm

height: 6 mm

length: 15 mm



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Step 3) Use these numbers in the volume formula.

$$\begin{aligned}\text{Volume} &= \frac{1}{2} \times \text{base} \times \text{height} \times \text{length} \\ &= \frac{1}{2} \times 8 \times 6 \times 15 \\ &= 360 \text{ mm}^3\end{aligned}$$

The volume is 360 cubic millimeters.

b. Step 1) Volume of a cylinder:

$$\text{Volume} = \pi r^2 h$$

Step 2) Find the radius and height of the cylinder.

$$\begin{aligned}\text{radius} &= \frac{1}{2} \times \text{diameter} = \frac{1}{2} \times 20 = 10 \\ \text{height} &= 10\end{aligned}$$

Step 3) Use these numbers in the volume formula. Use 3.14 for  $\pi$ .

$$\begin{aligned}\text{Volume} &= \pi r^2 h \\ &\approx 3.14 \times 10 \times 10 \times 10 \\ &\approx 3140 \text{ mm}^3\end{aligned}$$

The volume of the cylinder is about 3140 cubic millimeters.

