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Volume of Cylinders and Pyramids- Guided Lesson Explanation

Explanation#1

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 m height: 4 m length: 10 m

Step 3) Use these numbers in the volume formula.

$$\text{Volume} = \frac{1}{2} \times \text{base} \times \text{height} \times \text{length}$$
$$= \frac{1}{2} \times 8 \times 4 \times 10$$
$$= 160 \text{ m}^3$$

The volume is 160 cubic meters.

Explanation#2

Step 1) Volume of a cylinder:

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

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

$$\text{radius} = \frac{1}{2} \times \text{diameter} = \frac{1}{2} \times 12 = 6$$
height = 6

Step 3) Use these numbers in the volume formula. Use 3.14 for π.

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Volume = $\pi r^2 h$
≈ 3.14 × 6 × 6 × 6
≈ 678.58 yd^3

The volume of the cylinder is about 679 cubic yards.

Explanation#3

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: 5 in height: 8 in length: 12 in

Step 3) Use these numbers in the volume formula.

$$\text{Volume} = \frac{1}{2} \times \text{base} \times \text{height} \times \text{length}$$
$$= \frac{1}{2} \times 5 \times 8 \times 12$$
$$= 240 \text{ in}^3$$

The volume is 240 cubic inches.