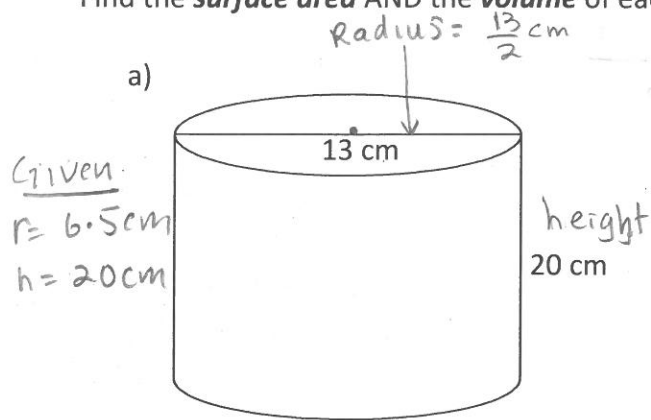


Example 1 Using the Formulas for Surface Area and Volume

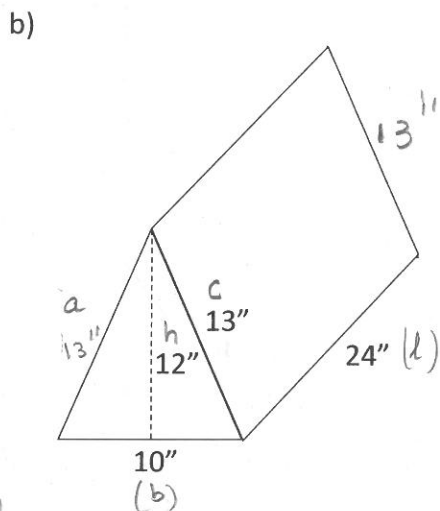
Find the **surface area** AND the **volume** of each of the following shapes: side + Top and Bottom



$$\begin{aligned} \text{Surface Area (cylinder)} &= 2\pi r h + 2\pi r^2 \\ &= 2 \times \pi \times 6.5 \times 20 + \pi (6.5)^2 \\ &= 816.81 \text{ cm}^2 + 265.46 \text{ cm}^2 \\ \text{Surface Area} &= \underline{1082.27 \text{ cm}^2} \end{aligned}$$

$$\begin{aligned} \text{Volume (cylinder)} &= \pi r^2 h \\ &= \pi \times (6.5^2) \times 20 \end{aligned}$$

$$\text{Volume} = \underline{\underline{2654.65 \text{ cm}^3}}$$



$$\begin{aligned} \text{Surface Area (Triangular Prism)} &= bh + l(a + b + c) \\ &= (10'' \times 12'') + 24''(13'' + 10'' + 13'') \\ &= 120 \text{ in}^2 + 24(36 \text{ in}^2) \\ &= 120 \text{ in}^2 + 864 \text{ in}^2 \\ \text{Surface Area} &= \underline{984 \text{ in}^2} \end{aligned}$$

$$\begin{aligned} \text{Volume (Triangular Prism)} &= \frac{1}{2} b \times h \times l \\ &= \frac{1}{2} \times 10'' \times 12'' \times 24'' \end{aligned}$$

$$\text{Volume} = \underline{\underline{1440 \text{ in}^3}}$$

Given

$$a = 13''$$

$$b = 10''$$

$$c = 13''$$

$$l = 24''$$

$$h = 12''$$