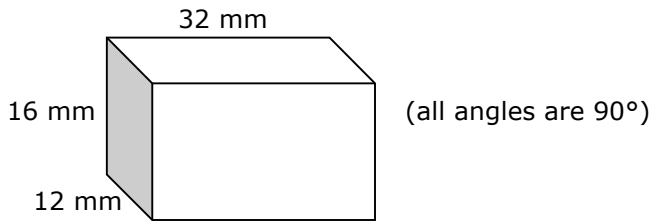


Volume and Surface Area Practice #1

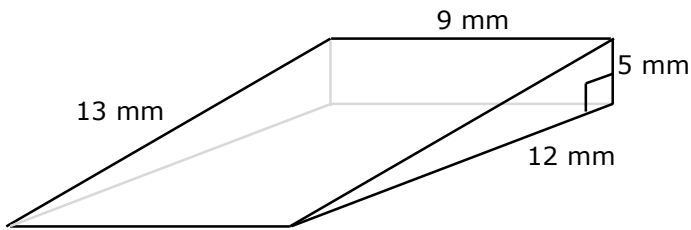
1.



Volume =

Surface Area =

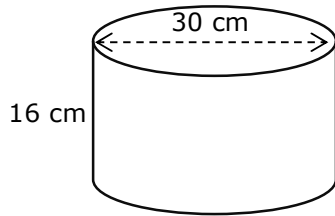
2.



Volume =

Surface Area =

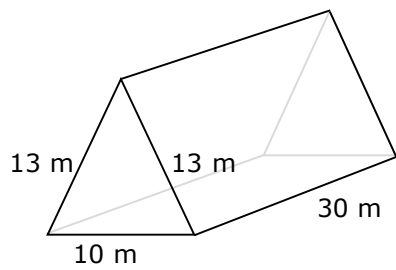
3.



Volume =

Surface Area =

4.



Volume =

Surface Area =

Answers: Volume and Surface Area Practice #1

Volume

Q1 base \times height \times depth

$$12 \times 16 \times 32 = \mathbf{6,144 \text{ mm}^3}$$

or

$$1.2 \times 1.6 \times 3.2 = 6.144 \text{ cm}^3$$

$$= \mathbf{6.144 \text{ L}}$$

Surface Area

6 sides, all base \times height

$$\text{front: } 16 \times 32 = 512$$

$$\text{left: } 12 \times 16 = 192$$

$$\text{top: } 12 \times 32 = 384$$

$$512 + 512 + 192 + 192 + 384 + 384$$

$$= \mathbf{2,176 \text{ mm}^2}$$

Q2 base area ($\frac{1}{2} \times$ base \times height) \times depth

$$\frac{1}{2} \times 12 \times 5 \times 9 = \mathbf{270 \text{ mm}^3}$$

or

$$\frac{1}{2} \times 1.2 \times 0.5 \times 0.9 = 0.270 \text{ cm}^3$$

$$= \mathbf{0.270 \text{ L}}$$

three rectangles + two triangles

$$\text{top: } 13 \times 9 = 117$$

$$\text{back: } 5 \times 9 = 45$$

$$\text{bottom: } 12 \times 9 = 108$$

$$\text{triangle: } \frac{1}{2} \times 12 \times 5 = 30$$

$$117 + 45 + 108 + 30 + 30$$

$$= \mathbf{330 \text{ mm}^2}$$

Q3 base area ($\pi \times$ radius²) \times depth

$$\pi \times 15^2 \times 16 = \mathbf{11,310 \text{ cm}^3}$$

$$= \mathbf{11.31 \text{ L}}$$

two circle ends + side (perimeter \times depth)

$$\text{top: } \pi \times 15^2 = 706.86$$

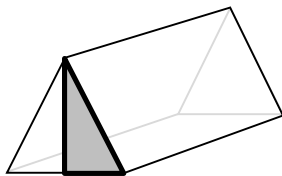
$$\text{side: } (\pi \times 30) \times 16 = 1507.96$$

$$706.86 + 706.86 + 1507.96$$

$$= \mathbf{2921.7 \text{ m}^2}$$

Q4 Need triangle height first.

$$h^2 = 13^2 - 5^2 \quad h = 12$$



base area ($\frac{1}{2} \times$ base \times height) \times depth

$$\frac{1}{2} \times 10 \times 12 \times 30 = \mathbf{1,800 \text{ m}^3}$$

$$= \mathbf{1,800,000 \text{ L}}$$

three rectangles + two triangles

$$\text{front: } 13 \times 30 = 390$$

$$\text{back: } 13 \times 30 = 390$$

$$\text{bottom: } 10 \times 30 = 300$$

$$\text{triangle: } \frac{1}{2} \times 10 \times 12 = 60$$

$$390 + 390 + 300 + 60 + 60$$

$$= \mathbf{330 \text{ mm}^2}$$

Use sensible rounding. Remember to check units as well as the number answer