Perimeter, area, surface area, and Volume Review

Find the **perimeter** of each figure. Label your answers with the correct units.

1. \[ \rho = 9 + 5 + 5 + 5 = 24 \text{ cm} \]

2. (Assume this figure is symmetric)

\[ \rho = 2(2.3) + 8(1.1) + 2(5.2) = 4.6 + 8.8 + 10.4 = 23.8 \text{ in} \]

Find the area of each figure. Label answers and give exact answers.

3. \[ A = bh = (0.5)(2) = 1 \text{ in}^2 \]

4. \[ A = \frac{1}{2}bh = \frac{1}{2}(45)(19) = 427.5 \text{ mm}^2 \]

5. Approximate \( \pi \) with 3.14

\[ A = \pi r^2 = 3.14(5)^2 = 78.5 \text{ yd}^2 \]

6. This is a regular hexagon

\[ A = 6 \left[ \frac{1}{2}bh \right] = 6 \left[ \frac{1}{2}(8)(6.93) \right] = 166.32 \text{ ft}^2 \]
7. Find the total area using $\pi = 3.14$

$$T_{\text{total area}} = 12(7) + \frac{1}{2} \pi (4)^2 + \frac{1}{2}(4)(7)$$

$$= 84 + 50.24 + 14$$

$$= 144.24 \text{ m}^2$$

8. Find the surface area and volume of this rectangular prism.

$$SA = 2(5)(10) + 2(10)(12) + 2(5)(12)$$

$$= 100 + 240 + 120$$

$$= 460 \text{ cm}^2$$

$$V = Bh$$

$$= 5(12)(10)$$

$$= 600 \text{ cm}^3$$

9. Find the surface area and the volume of this right square pyramid.

Height of pyramid is 8 cm. Length of one side of the square is 12 cm. Height of one lateral face is 10 cm.

$$SA = 12^2 + 4\left(\frac{1}{2}\right)(12)(8)$$

$$= 144 + 240$$

$$= 384 \text{ cm}^2$$

$$V = \frac{1}{3} Bh$$

$$= \frac{1}{3}(12)^2(8)$$

$$= 48(8)$$

$$= 384 \text{ cm}^3$$
1. Find the surface area and volume of each of the following figures.

(a) \[ SA = 2 \pi r^2 + 2 \pi r \cdot h \]
\[ = 2 \pi (5.5)^2 + 2 \pi (5.5)(11) \]
\[ = 189.97 + 379.94 = 569.91 \text{ cm}^2 \]

(b) \[ V = \pi r^2 \cdot h \]
\[ = \pi (5.5)^2(11) \]
\[ = 1044.83 \text{ cm}^3 \]

(c) \[ V = \text{Rec} \times \text{Tri} \]
\[ V = 10(3)(8) + \frac{1}{2}(8)(3)(8) \]
\[ = 240 + 96 = 336 \text{ in}^3 \]

(d) \[ V = \text{Rectangular prism} \]
\[ V = 5 \times 4 \times 3 = 60 \text{ in}^3 \]

Assume symmetry

\[ V = 10 \times 3 \times 4 \]
\[ V = 120 \text{ cm}^3 \]

\[ 2 \times (5 + 4) \cdot (3 + 2) \]
\[ = 2 \times 9 \cdot 5 = 90 \text{ cm}^2 \]