Surface Area 2 - Nets and Surface Area

Draw **proportional nets** for the following shapes. Appropriate measurements should be included for each side-length, with hash marks to indicate equal side-lengths. Then, compute the surface area of each shape to one decimal place.

(triangular prism)

![Diagram of a triangular prism](Image)

**Use Pyth. Thm. to find hypotenuse!**

\[ 3^2 + 4^2 = 5^2 \]

\[ 9 + 16 = 25 \]

\[ 5 \text{ cm} \]

**SA**:

\[ 2 \left( \frac{3 \text{ cm} \times 4 \text{ cm}}{2} \right) + (2 \text{ cm} \times 5 \text{ cm}) + (2 \text{ cm} \times 4 \text{ cm}) + (2 \text{ cm} \times 5 \text{ cm}) \]

\[ = 12 + 10 + 16 \]

\[ = 36 \text{ cm}^2 \]

OR View the 3 \( \square \) as one long one!

(rectangular prism) Label all sides properly!

![Diagram of a rectangular prism](Image)

**SA**:

\[ 2 \times \text{sum of areas of different rectangles} \]

\[ = 2 \times (1.5 \text{ cm} \times 3 \text{ cm}) + 2 \times (3 \text{ cm} \times 4 \text{ cm}) + 2 \times (2 \text{ cm} \times 4 \text{ cm}) \]

\[ = 9 \text{ cm}^2 + 12 \text{ cm}^2 + 16 \text{ cm}^2 \]

\[ = 47 \text{ cm}^2 \]
(tetrahedron) (all faces congruent)

\[ h^2 + 2.5^2 = 5^2 \]
\[ h^2 + 6.25 = 25 \]
\[ h^2 = 18.75 \]
\[ h = 4.33 \text{ cm} \]

\[ SA = U A_\Delta \]
\[ = U \left( \frac{bh}{2} \right) \]
\[ = U \left( \frac{5\text{ cm} \times 4.33\text{ cm}}{2} \right) \]
\[ = 45.3 \text{ cm}^2 \]

(cube)

\[ 5A = 6 \text{ of the square!} \]
\[ = 6 \times A_{\square} \]
\[ = 6 \times s^2 \]
\[ = 6 \times (3\text{ cm})^2 \]
\[ = 54\text{ cm}^2 \]

\[ 3\text{ cm} \]

whoops!

whoopee! 105.8 \text{ cm}^2