Surface Area 3 - 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)

\[ h^2 + 2 \cdot s^2 = 6^2 \]
\[ h^2 + 6.25 = 36 \]
\[ h^2 = 29.75 \]
\[ h = 5.45 \]

\[ S = 2 \cdot (6 \cdot 7) + 3 \cdot 7 \cdot 6 \]
\[ = 2 \cdot (42) + 126 \]
\[ = 146.25 \text{ cm}^2 \]

(regular pentagonal pyramid) Label all sides properly!

\[ h^2 + (1.25s)^2 = (2s)^2 \]
\[ h^2 + 1.5625s^2 = 4s^2 \]
\[ h^2 = 2.4375s^2 \]
\[ h = 1.56s \]

\[ S = 5A_s + 5A_s \]
\[ = 5 \left( 2.5 \cdot 1.5 \right) + 5 \left( 2.5 \cdot 2.5 \cdot 5.87 \right) \]
\[ = 46.44 \text{ cm}^2 \]
(cylinder)

\[ h = 4\text{cm}, \quad r = 1\text{cm} \]

\[ \text{SA} = 20 + \square \]

\[ = 2\pi r^2 + l \cdot w \]

\[ = 2\pi (1\text{cm})^2 + (6.28\text{cm})(4\text{cm}) \]

\[ = 6.28\text{cm}^2 + 25.12\text{cm}^2 \]

\[ = 31.4\text{cm}^2 \]

(prism) Pay attention to the side-lengths!

\[ (6\text{cm})^2 + (4\text{cm})^2 = c^2 \]

\[ 36\text{cm}^2 + 16\text{cm}^2 = c^2 \]

\[ 52\text{cm}^2 = c^2 \]

\[ 7.21\text{cm} = c \]

\[ 1 = 2\left(\frac{4 \times 6}{2}\right) \]

\[ = 24\text{cm}^2 \]

\[ = 72\text{cm}^2 \]

\[ 2 = 3(6\text{cm}) \]

\[ = 18\text{cm}^2 \]

\[ = 72.1\times 4 \]

\[ = 28.84\text{cm}^2 \]

\[ \text{SA} = 1 + 2 + 3 + 4 + 5 + 6 \]

\[ = 172.84\text{cm}^2 \]