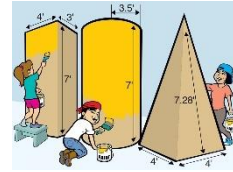


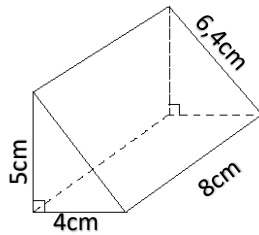


## Grade 8 - Mathematics Surface Area and Volume 2



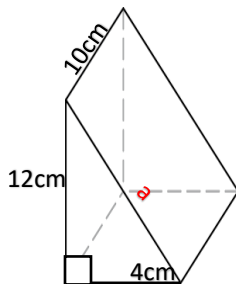
### Memo

1. Calculate surface area of the following triangular prism.



$$\begin{aligned}
 SA &= bh + H(a + b + c) \\
 &= (4\text{cm} \times 5\text{cm}) + 8\text{cm}(6,4 + 5\text{cm} + 4\text{cm}) \\
 &= 20\text{cm}^2 + (8\text{cm} \times 15,4\text{cm}) \\
 &= 20\text{cm}^2 + 123,2\text{cm}^2 \\
 &= 143,2\text{cm}^2
 \end{aligned}$$

2. Calculate the surface area of the following triangular prism.

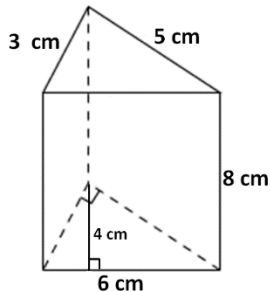


$$\begin{aligned}
 a^2 &= (4\text{cm})^2 + (12\text{cm})^2 \text{ (Pythag)} \\
 a^2 &= 16\text{cm}^2 + 144\text{cm}^2 \\
 a^2 &= 160\text{cm}^2 \\
 a &= 12,65\text{cm}
 \end{aligned}$$

$$\begin{aligned}
 SA &= bh + H(a + b + c) \\
 &= (4\text{cm} \times 12\text{cm}) + 10\text{cm}(12,65\text{cm} + 12\text{cm} + 4\text{cm}) \\
 &= 48\text{cm}^2 + (10\text{cm} \times 28,65\text{cm}) \\
 &= 48\text{cm}^2 + 286,5\text{cm}^2 \\
 &= 334,5\text{cm}^2
 \end{aligned}$$



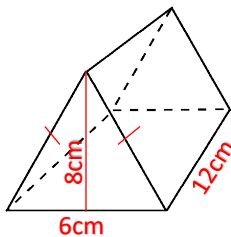
3. Calculate the surface area of the following triangular prism



$$\begin{aligned} SA &= bh + H(a + b + c) \\ &= (6\text{cm} \times 4\text{cm}) + 8\text{cm}(3\text{cm} + 5\text{cm} + 6\text{cm}) \\ &= 24\text{cm}^2 + 8\text{cm}(14\text{cm}) \\ &= 24\text{cm}^2 + 112\text{cm}^2 \\ &= 136\text{cm}^2 \end{aligned}$$

4. Calculate the surface area of a triangular prism with the following measurements. The isosceles triangular base has a base of 6cm and a height of 8cm. The prism has a Height of 12cm.

Draw a representation:



$$\begin{aligned} \text{Hypot}^2 &= (\frac{1}{2}b)^2 + h^2 \\ &= (\frac{1}{2} \times 6\text{cm})^2 + (8\text{cm})^2 \\ &= (3\text{cm})^2 + 64\text{cm}^2 \\ &= 9\text{cm}^2 + 64\text{cm}^2 \\ &= 73\text{cm}^2 \\ &= 8,54\text{cm} \end{aligned}$$

$$\begin{aligned} SA &= bh + H(a + b + c) \\ &= (6\text{cm} \times 8\text{cm}) + 12\text{cm}(6\text{cm} + 8,54\text{cm} + 8,54\text{cm}) \\ &= 48\text{cm}^2 + 12\text{cm}(23,08\text{cm}) \\ &= 48\text{cm}^2 + 276,96\text{cm}^2 \\ &= 324,96\text{cm}^2 \end{aligned}$$