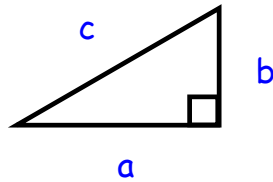


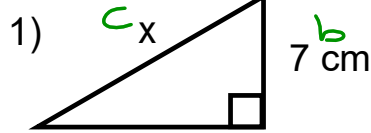
## Review: Pythagorean Theorem



$$a^2 + b^2 = c^2$$

- only works for right triangles.
- need 2 sides

ex) Find missing length "x"



$$8^2 + 7^2 = c^2$$

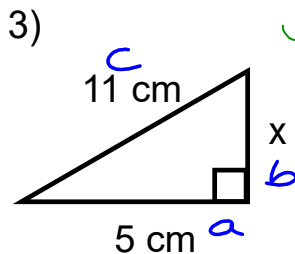
$$64 + 49 = c^2$$

$$113 = c^2$$

$$\sqrt{113} = c$$

$$10.6 = c$$

cm

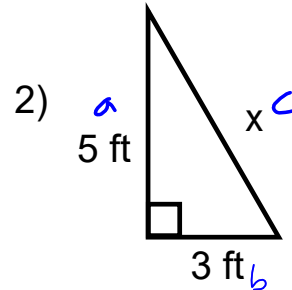


$$5^2 + b^2 = 11^2$$
~~$$25 + b^2 = 121 - 25$$~~

$$b^2 = 96$$

$$b = \sqrt{96}$$

$$b = 9.8 \text{ cm}$$



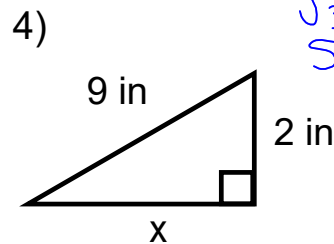
$$5^2 + 3^2 = c^2$$

$$25 + 9 = c^2$$

$$34 = c^2$$

$$\sqrt{34} = c$$

$$5.8 \text{ ft} = c$$



$$2^2 + x^2 = 9^2$$

$$4 + x^2 = 81$$

$$x^2 = 77$$

$$x = \sqrt{77}$$

$$x = 8.8 \text{ in}$$

## Area

- amount of space an object takes up in 2-D

$$A_{\square} = s \times s \text{ or } s^2$$

$$A_{\text{rectangle}} = L \times w$$

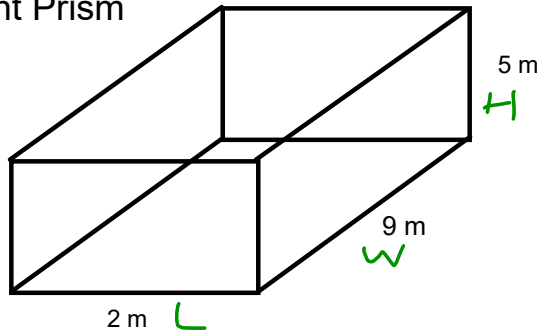
$$A_{\circ} = \pi r^2$$

$$A_{\triangle} = \frac{1}{2}bh = \frac{bh}{2}$$

## Surface Area

- the total area of all sides of a 3-d object

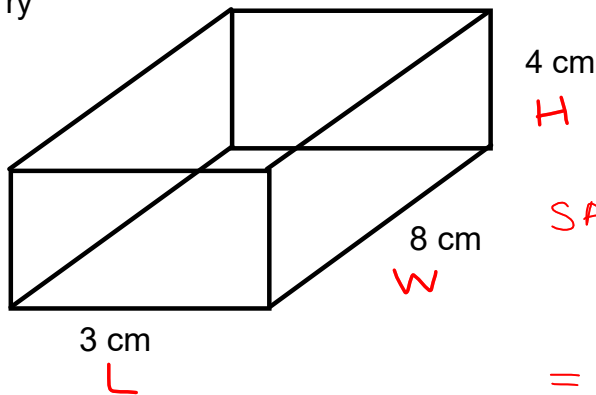
Right Prism



$$SA = 2LW + 2WH + 2LH$$

$$\begin{aligned} SA &= 2(2)(9) + 2(9)(5) \\ &\quad + 2(2)(5) \\ &= 36 + 90 + 20 \\ &= 146 \text{ m}^2 \end{aligned}$$

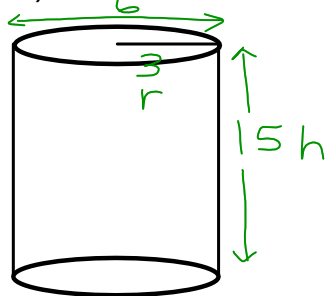
Try



$$\begin{aligned} SA &= 2(3)(8) \\ &\quad + 2(8)(4) \\ &\quad + 2(3)(4) \\ &= 48 + 64 + 24 \\ &= 136 \text{ cm}^2 \end{aligned}$$

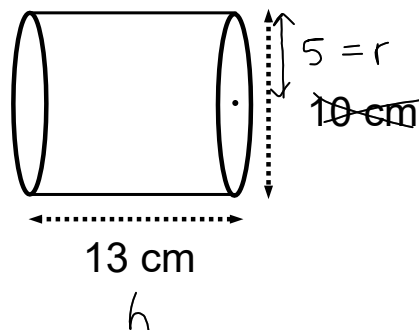
## S.A of Cylinder

ex) Find S.A of a coke can that's 15 cm tall and 6 cm wide



$$\begin{aligned} SA &= 2\pi r^2 + 2\pi r h \\ &= 2\pi(3^2) + 2\pi(3)(15) \\ &= 56.5 + 282.7 \\ &= 339.2 \text{ cm}^2 \end{aligned}$$

Try



$$\begin{aligned} SA &= 2\pi(5^2) \\ &\quad + 2\pi(5)(13) \\ &= 157.1 + 408.4 \\ &= 565.5 \text{ cm}^2 \end{aligned}$$