Exercise 3: Under normal conditions, 1.5 feet of snow will melt into 2 inches of water. After a monster snowstorm, there were 3.5 feet of snow. How many inches of water will there be when the snow melts?

1.5 ft snow = 2 in H_2O

identify

$\longleftrightarrow$

$\dfrac{1.5 \text{ ft snow}}{2 \text{ in } H_2O}$

conversion rate

$$\dfrac{1.5 \text{ ft snow}}{2 \text{ in } H_2O} = \dfrac{3.5 \text{ ft snow}}{x}$$

x in H_2O

$$2(3.5) = 1.5x$$

$$\dfrac{2(3.5)}{1.5} = \dfrac{1.5x}{1.5}$$

$$\dfrac{7}{1.5} = x$$

$$4.\overline{6} \text{ in } H_2O = x$$

$$4\tfrac{2}{3} \text{ in } H_2O = x$$

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$1.5x = 2(3.5)$

$1.5x = 7$

$x = \dfrac{7}{1.5}$

$x = 4.\overline{6}$ in H_2O

$x = 4\frac{2}{3}$ in H_2O

Does arrangement matter?

Don't do this

$\dfrac{1.5\text{ft snow}}{3.5\text{ft snow}} = \dfrac{x}{2\text{ in } H_2O}$

$(1.5)(2) = 3.5x$

$3 = 3.5x$

$\dfrac{3}{3.5} = x$

$x = 0.857142$ in H_2O
Does this make sense?
No

→ 1.5 ft snow and 2 in H_2O should NOT be diagonal on the proportion

→ always keep them across equal sign or one atop the other.