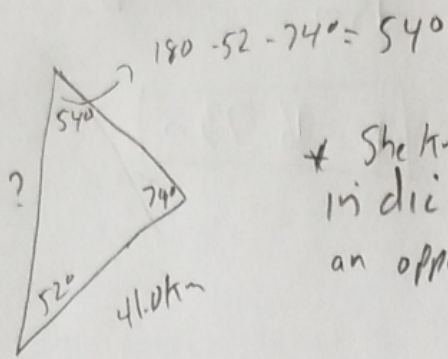


(4) a)



\* She knows b/c a larger angle opposite of a side indicates a larger side length. If 54° has an opposite of 41.0 km, 74° must be larger than 41 km.

b)

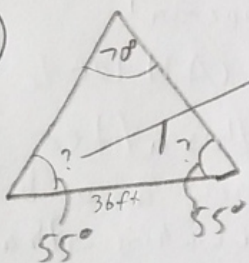
$$\frac{\sin 54}{41.0 \text{ km}} = \frac{\sin 74}{x}$$

$$\frac{\sin 54 \times x}{\sin 54} = \frac{\sin 74 \times 41 \text{ km}}{\sin 54}$$

$$x = \frac{39.4117}{\sin 54}$$

$$x = 48.72 \text{ km}$$

(5)



these 2 must be the same as the 2 sides are the same →

$$180^\circ - 70^\circ = \frac{110^\circ}{2} = 55^\circ$$

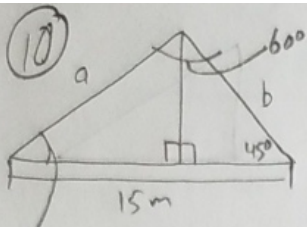
$$\frac{\sin 70}{36 \text{ ft}} = \frac{\sin 55}{?}$$

$$\sin 70 \times ? = \sin 55 \times 36 \text{ ft}$$

$$\frac{\sin 70 \times ?}{\sin 70} = \frac{29.4895}{\sin 70}$$

$$? = 31.38 \text{ ft} + 1 \text{ ft} = 32.38 \text{ ft}$$

↑  
due to 1ft overhang



$$\frac{\sin 60^\circ}{15\text{m}} = \frac{\sin 45^\circ}{a}$$

$$a = 12.25\text{m}$$

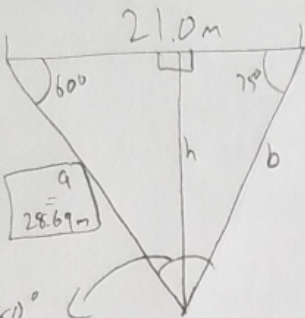
$$\frac{\sin 60^\circ}{15\text{m}} = \frac{\sin 75^\circ}{b}$$

$$b = 16.73\text{m}$$

$$\begin{array}{r} 180 \\ - 45 \\ - 60 \\ \hline 75 \end{array}$$

\* note diagram is not accurate as  $60^\circ + 75^\circ$  are not accurate.

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\* in order for us to find "h" we must

know "a" or "b" so we can use our  $\frac{\sin 90^\circ}{a} = \frac{\sin 60^\circ}{h}$

or

$$\frac{\sin 90^\circ}{b} = \frac{\sin 75^\circ}{h}$$

\* note: we can also use normal SOH CAHTOA to find this after we know "a" or "b" as we are working with a right angle triangle.

$$\begin{array}{r} 180^\circ \\ - 60 \\ - 75 \\ \hline 45 \end{array}$$

Side a

$$\frac{\sin 45^\circ}{21.0\text{m}} = \frac{\sin 75^\circ}{a}$$

$$\frac{\sin 45^\circ \times a}{\sin 45^\circ} = \frac{\sin 75^\circ \times 21.0\text{m}}{\sin 45^\circ}$$

$$a = 28.69\text{m}$$

Height (h)

$$\frac{\sin 90^\circ}{28.69\text{m}} = \frac{\sin 60^\circ}{h}$$

$$\frac{\sin 90^\circ \times h}{\sin 90^\circ} = \frac{\sin 60^\circ \times 28.69\text{m}}{\sin 90^\circ}$$

$$h = 24.85\text{m}$$

$$\sin 60^\circ = \frac{\text{opp}}{\text{hyp}}$$

$$\sin 60^\circ = \frac{h}{28.69\text{m}}$$

$$h = 24.8$$