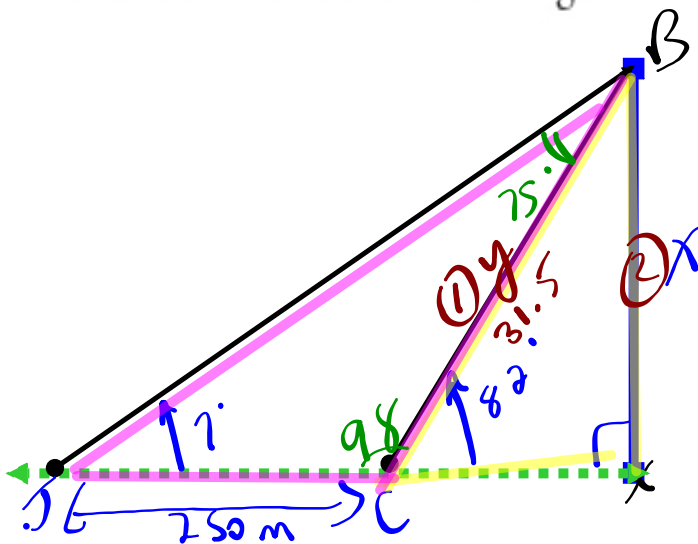# WARM-UP...

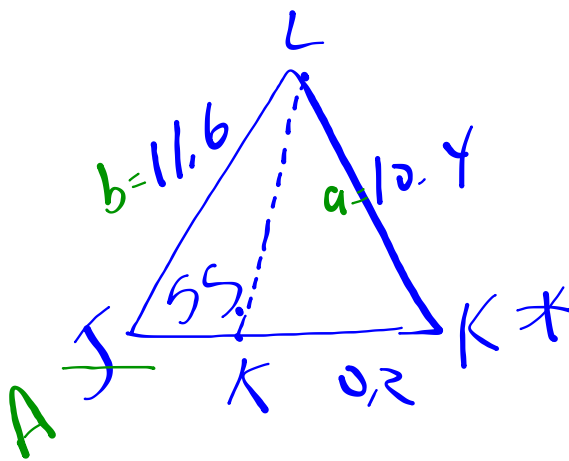**EXAMPLE 2**   Solving a problem using the sine law

Colleen and Juan observed a tethered balloon advertising the opening of a new fitness centre. They were 250 m apart, joined by a line that passed directly below the balloon, and were on the same side of the balloon. Juan observed the balloon at an angle of elevation of 7° while Colleen observed the balloon at an angle of elevation of 82°. Determine the height of the balloon to the nearest metre.

$$① \quad \frac{y}{\sin 7°} = \frac{250 \sin 7°}{\sin 75°}$$

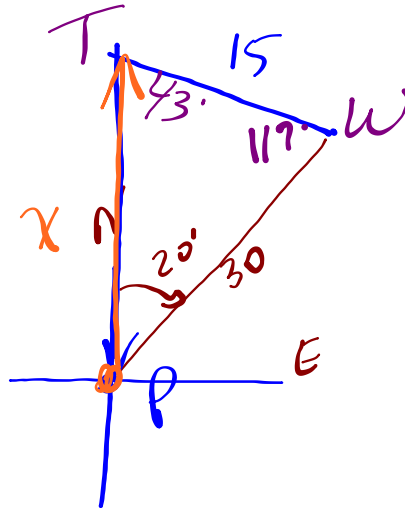$$y = 31.5$$

$$② \quad \sin 82° = \frac{x}{31.5} \quad (31.5)$$

$$31.2 m \approx x$$

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c) In $\triangle JKL$, $\angle J = 55°$, $j = 10.4$ km, and $k = 11.6$ km.

✓ SSA
✓ acute
✓ $a < b$.

$h = 11.6 \sin 55°$
$h = 9.5$

$\begin{array}{ccc} a & vs & h \\ 10.4 & > & 9.5 \end{array}$

✗ ambiguous

6. The following describes the location of a buried treasure. From the pine tree, walk 30 paces N20°E, then turn and walk 15 paces until the tree is due south. How many paces would you need to walk due north of the tree to reach the buried treasure?
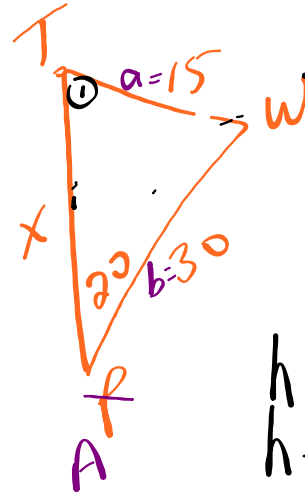
$$\frac{\sin T}{30} = \frac{\sin 20}{15}$$
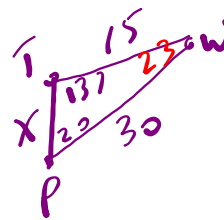
$$\sin^{-1} \sin T = (0.6840)$$

$$\angle T = 43°$$

$$\frac{x \sin 47}{\sin 117} = \frac{15 \sin 117}{\sin 20}$$

$$X = 39.1 \text{ paces}$$

OR

$$\checkmark SSA$$
$$\checkmark \text{acute}$$
$$\checkmark a < b$$

$$h = 30 \sin 20$$
$$h = 10.3$$

$$\begin{array}{ccc} a & vs & h \\ 15 & > & 10.3 \end{array}$$

$$\checkmark \text{ambiguous}$$

$$\angle T = 180 - 43°$$
$$\angle T = 137°$$

$$\frac{x \sin 23°}{\sin 23°} = \frac{15 \sin 23°}{\sin 20°}$$

$$X = 17.1 \text{ paces}$$

REVIEW TIME!!!

MORE practice in class...test tomorrow!

Review for Test - Lots of Practice from the Textbook!!!

Chapter Review...   **Page 128** ⎤
(Frequently Asked Questions)   **Page 153** ⎦ Chp. 3
                                         Page 174 ⎤
                                         Page 199 ⎦ Chp. 4

Friday Test

Practice Questions...   Bearing #11, 12   **Page 129 #1 - 9** ⎤ Chp. 3
* Ambiguous Case → 4.3 →   **Page 154 #1 - 12** ⎦
                                                    Page 175 #1 - 9 ⎤ Chp. 4
                              Bearing #8 →   **Page 200 #1 - 8** ⎦

Practice Tests...   **Page 152 #1 - 8** Chp. 3
                                                    Page 198 #1 - 7 Chp. 4