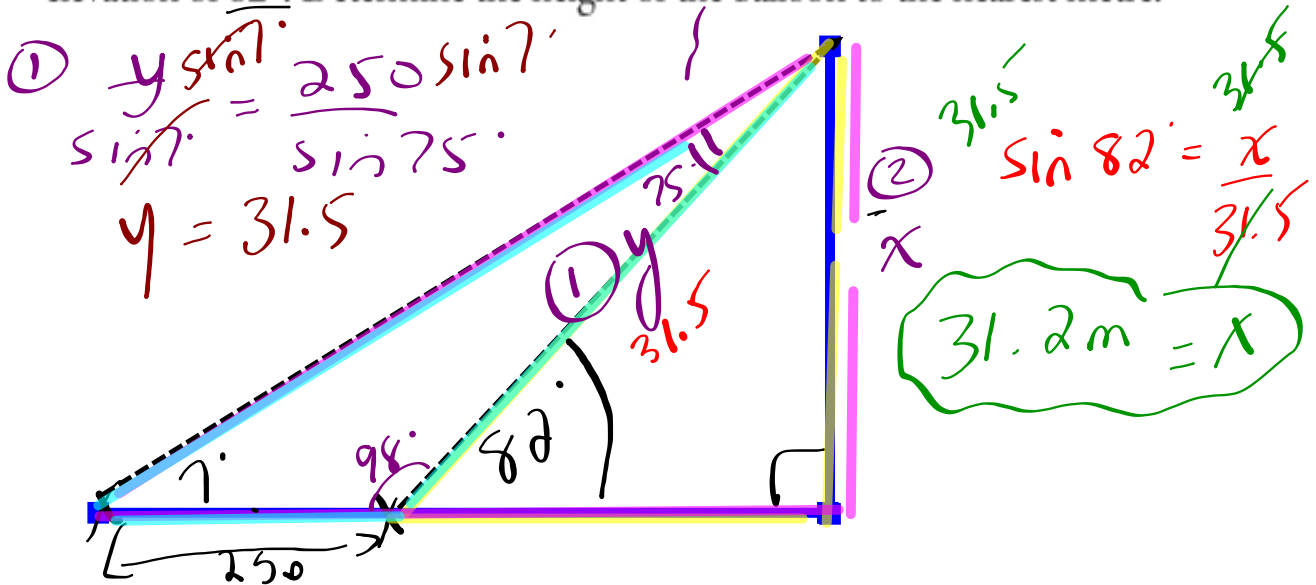


WARM-UP...

EXAMPLE 2 Solving a problem using the sine law

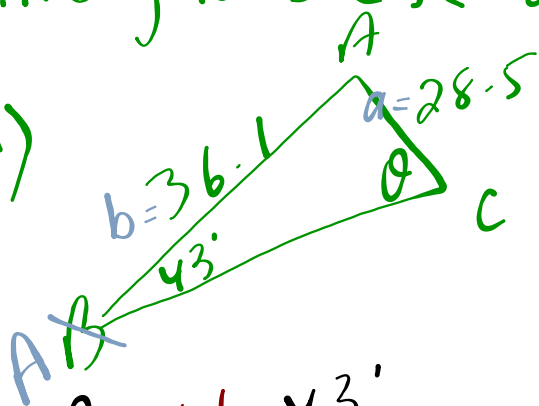
Colleen and Juan observed a tethered balloon advertising the opening of a new fitness centre. They were 250 m apart, joined by a line that passed directly below the balloon, and were on the same side of the balloon. Juan observed the balloon at an angle of elevation of 7° while Colleen observed the balloon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



Homework?

Ambiguous Case Worksheet

4a)



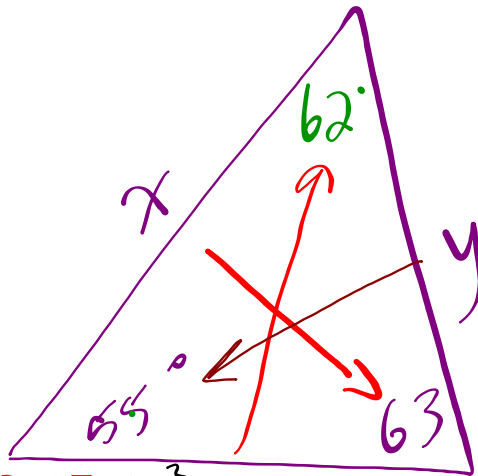
$$\frac{36.1 \sin \theta}{36.1} = \frac{28.5 \sin 43^\circ}{28.5}$$

$$\sin^{-1} \sin \theta = \sin^{-1}(0.8639)$$

~~$\theta = 60^\circ$~~ OR $\theta = 180 - 60^\circ$
 $\theta = 120^\circ$

- ✓ *SSA
- ✓ acute angle
- a < b
- $h = 36.1 \sin 43^\circ$
- $h = 24.6$
- a vs h
- $28.5 > 24.6$
- ✗ ambiguous

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4b)



$$\frac{x \sin 63^\circ}{\sin 63^\circ} = \frac{10.5 \sin 63^\circ}{\sin 62^\circ} \quad 10.5 \text{ cm}$$

$$x = 10.6 \text{ cm}$$

$$\frac{y \sin 55^\circ}{\sin 55^\circ} = \frac{10.5 \sin 55^\circ}{\sin 62^\circ} \quad \text{SSA}^*$$

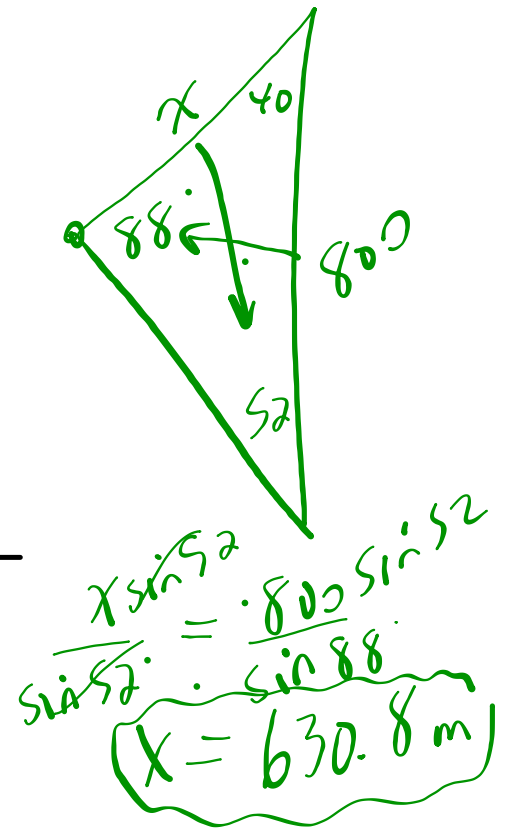
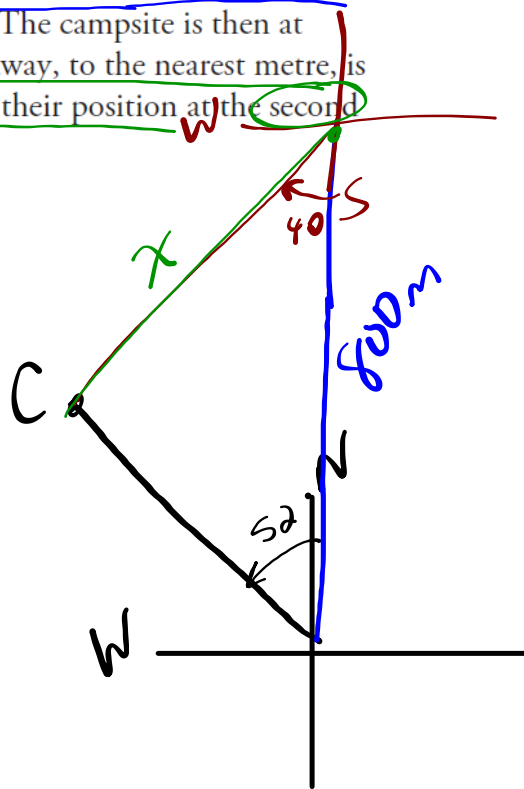
$$y = 9.7 \text{ cm}$$

$$* \left(\frac{a}{\sin A} = \frac{b}{\sin B} \right)$$

SSA

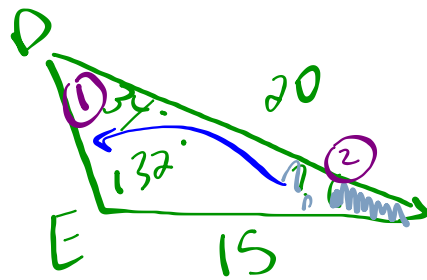
$$\frac{\sin A}{a} = \frac{\sin B}{b}$$

8. As Chloe and Ivan are paddling north on Lac La Ronge in Saskatchewan, they notice a campsite ahead, at $N52^\circ W$. They continue paddling north for 800 m, which takes them past the campsite. The campsite is then at $S40^\circ W$. How far away, to the nearest metre, is the campsite from their position at the second sighting?



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5. In $\triangle DEF$, $\angle E = 132^\circ$, $e = 20$ cm, and $d = 15$ cm. Determine the measure of $\angle F$ to the nearest degree.



- SSA
 X - acute angle
 | solution

$$\frac{15}{15} \sin D = \frac{15}{20} \sin 132$$

$$\sin D = \frac{15 \sin(132)}{20}$$

$D = \sin^{-1}(\frac{15 \sin(132)}{20})$
 $D = 33.87332476$

$D = 34^\circ$

$\angle F = 14^\circ$

REVIEW TIME!!!

MORE practice in class...test tomorrow!

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

**Chapter Review...
(Frequently Asked Questions)**

**Page 128
Page 153
Page 174
Page 199**

} *Chp. 3*
} *Chp. 4*

Friday Test

Practice Questions...

** Ambiguous case → 4.3*

Bearing #11, 12

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Page 200 #1 - 8**

} *Chp. 3*
} *Chp. 4*

Bearing #8

Practice Tests...

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Page 198 #1 - 7**

} *Chp. 3*
} *Chp. 4*