Trig 5.7

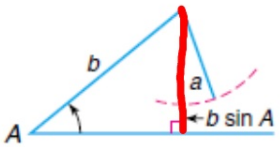
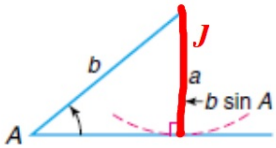
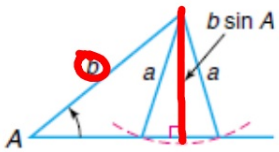
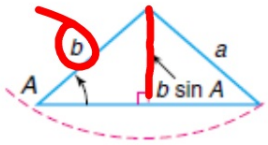
Determine whether a triangle has zero, one, or two solutions
Solve triangles using the law of sines

ambiguous case

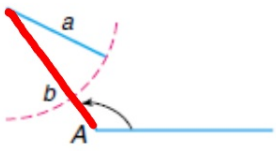
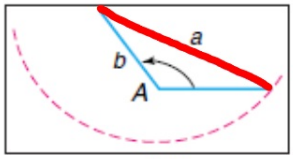
Goldilocks

whiteboards?

too cold just right too hot

Case 1: $A < 90°$			
$a < b$	$a < b \sin A$  no solution	$a = b \sin A$  one solution	$a > b \sin A$  two solutions
$a \geq b$	 one solution		

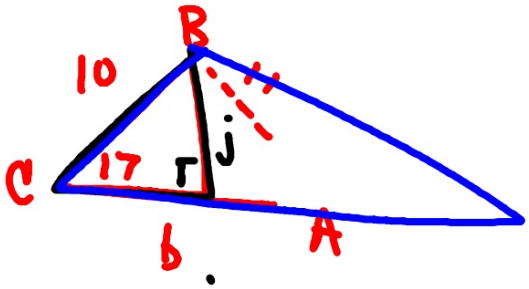
CONTENTS

Case 2: $A \geq 90°$	
$a \leq b$  no solution	$a > b$  one solution

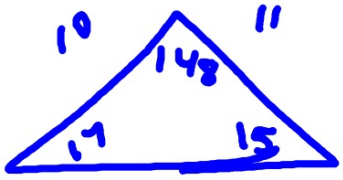
whiteboards

Find all solutions for each triangle. If no solutions exist, write *none.* Round to the nearest tenth.

6. $C = 17°, a = 10, c = 11$



$\sin 17 = \frac{j}{10}$ $j = 2.9$



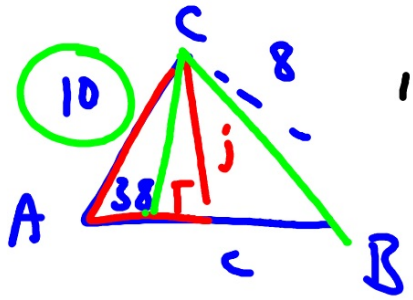
$\frac{11}{\sin 17} = \frac{10}{\sin A}$

$\frac{10 \sin 17}{11} = \frac{11 \sin A}{11}$

$A = 15$

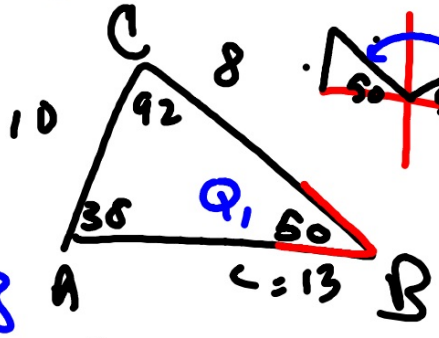
7. $A = 140°, b = 10, a = 3$

8. $A = 38°, b = 10, a = 8$



$\sin 38 = \frac{j}{10}$

$j \approx 6.2$



$\frac{8}{\sin 38} = \frac{10}{\sin B}$

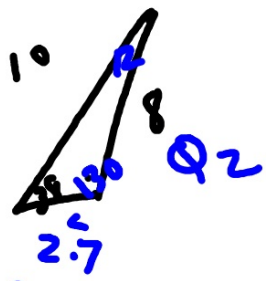
$8 \sin B = 10 \sin 38$

$\sin B = 0.7696$

$\frac{8}{\sin 38} = \frac{c}{\sin 92}$

$c = \frac{8 \sin 92}{\sin 38}$

$c = 13$



$\frac{8}{\sin 38} = \frac{c}{\sin 12}$

$c = \frac{8 \sin 12}{\sin 38}$

$c = 2.7$

Lesson 5-7 *(Pages 320–326)*

Find all solutions for each triangle.

1. $a = 5, b = 10, A = 145°$