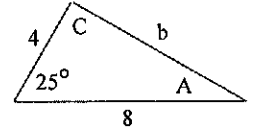


Student: _____
Date: _____

Instructor: Joe Better's
Course: Pre-Calculus Pre AP (Master Course)

Assignment: 8.3 Classwork Day 1

1. Solve the triangle.



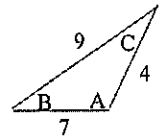
Solve for the value of each unknown.

$b =$ _____ (Round to two decimal places as needed.)

$A =$ _____ $^{\circ}$ (Round to one decimal place as needed.)

$C =$ _____ $^{\circ}$ (Round to one decimal place as needed.)

2. Solve the triangle.



Solve for the value of each unknown.

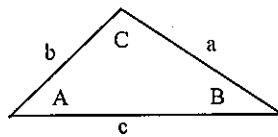
$A =$ _____ $^{\circ}$ (Round to one decimal place as needed.)

$B =$ _____ $^{\circ}$ (Round to one decimal place as needed.)

$C =$ _____ $^{\circ}$ (Round to one decimal place as needed.)

3. Solve the triangle.

$a = 1, b = 8, C = 100^{\circ}$



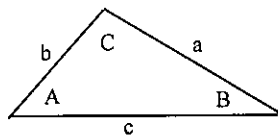
$c \approx$ _____ (Round to two decimal places as needed.)

$A \approx$ _____ $^{\circ}$
(Type your answer in degrees. Round to one decimal place as needed.)

$B \approx$ _____ $^{\circ}$
(Type your answer in degrees. Round to one decimal place as needed.)

4. Solve the triangle.

$a = 16, b = 18, c = 19$



$A \approx$ _____ $^{\circ}$
(Type your answer in degrees. Round to one decimal place as needed.)

$B \approx$ _____ $^{\circ}$
(Type your answer in degrees. Round to one decimal place as needed.)

$C \approx$ _____ $^{\circ}$
(Type your answer in degrees. Round to one decimal place as needed.)

5. Solve the following triangle using either the Law of Sines or the Law of Cosines.

$$B = 2^\circ, C = 80^\circ, b = 6$$

Select the correct choice below and, if necessary, fill in the answer boxes to complete your choice. (Round side lengths to the nearest hundredth and angle measures to the nearest degree as needed.)

- A. There is only one possible solution for the triangle.
The measurements for the remaining angle A and sides a and c are as follows.
 $A \approx \underline{\hspace{2cm}}^\circ$ $a \approx \underline{\hspace{2cm}}$ $c \approx \underline{\hspace{2cm}}$
- B. There are two possible solutions for the triangle.
The measurements for the solution with the smaller angle A are as follows.
 $A_1 \approx \underline{\hspace{2cm}}^\circ$ $a_1 \approx \underline{\hspace{2cm}}$ $c_1 \approx \underline{\hspace{2cm}}$
 The measurements for the solution with the larger angle A are as follows.
 $A_2 \approx \underline{\hspace{2cm}}^\circ$ $a_2 \approx \underline{\hspace{2cm}}$ $c_2 \approx \underline{\hspace{2cm}}$
- C. There are no possible solutions for this triangle.

6. Solve the following triangle using either the Law of Sines or the Law of Cosines.

$$A = 28^\circ, a = 10, b = 13$$

Select the correct choice below and, if necessary, fill in the answer boxes to complete your choice. (Round to two decimal places as needed.)

- A. There is only one possible solution for the triangle.
The measurements for the remaining angles B and C and side c are as follows.
 $B \approx \underline{\hspace{2cm}}^\circ$ $C \approx \underline{\hspace{2cm}}^\circ$ $c \approx \underline{\hspace{2cm}}$
- B. There are two possible solutions for the triangle.
The measurements for the solution with the smaller angle B are as follows.
 $B \approx \underline{\hspace{2cm}}^\circ$ $C \approx \underline{\hspace{2cm}}^\circ$ $c \approx \underline{\hspace{2cm}}$
 The measurements for the solution with the larger angle B are as follows.
 $B \approx \underline{\hspace{2cm}}^\circ$ $C \approx \underline{\hspace{2cm}}^\circ$ $c \approx \underline{\hspace{2cm}}$
- C. There are no possible solutions for this triangle.

1. 4.69

21.1

133.9

2. 106.6

25.2

48.2

3. 8.23

6.9

73.1

4. 51.2

61.2

67.7

5. A. There is only one possible solution for the triangle.

The measurements for the remaining angle A and sides a and c are as follows.

 $A \approx \underline{98}^\circ$ $a \approx \underline{170.25}$ $c \approx \underline{169.31}$

6. B. There are two possible solutions for the triangle.

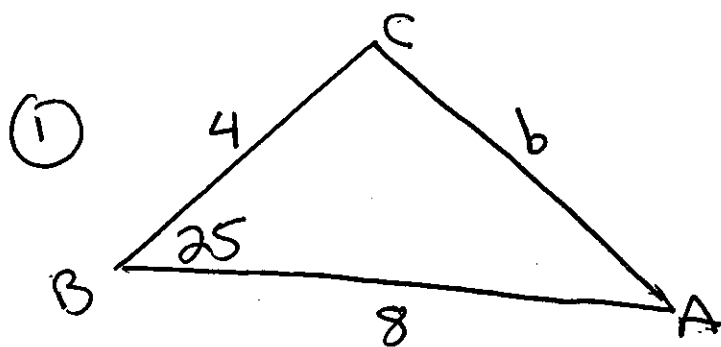
The measurements for the solution with the smaller angle B are as follows.

 $B \approx \underline{37.61}^\circ$ $C \approx \underline{114.39}^\circ$ $c \approx \underline{19.40}$

The measurements for the solution with the larger angle B are as follows.

 $B \approx \underline{142.39}^\circ$ $C \approx \underline{9.61}^\circ$ $c \approx \underline{3.56}$

8.3 cw day 1



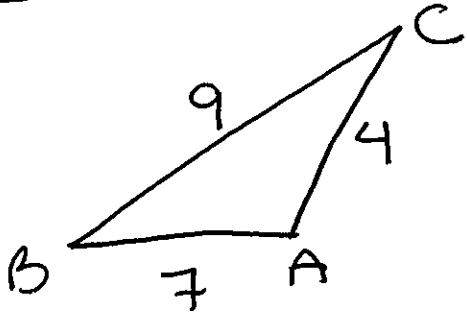
$$b^2 = 4^2 + 8^2 - 2(4)(8)\cos 25 \quad \boxed{b = 4.69}$$

$$\frac{\sin 25}{4.69} = \frac{\sin A}{4} \quad \boxed{A = 21.1^\circ}$$

$$180^\circ - 25^\circ - 21.1^\circ = \boxed{133.9^\circ = C}$$

8.3 on day 1

②



$$9^2 = 7^2 + 4^2 - 2(7)(4) \cos A$$

$$A = 106.6^\circ$$

$$\frac{\sin 106.6}{9} = \frac{\sin B}{4}$$

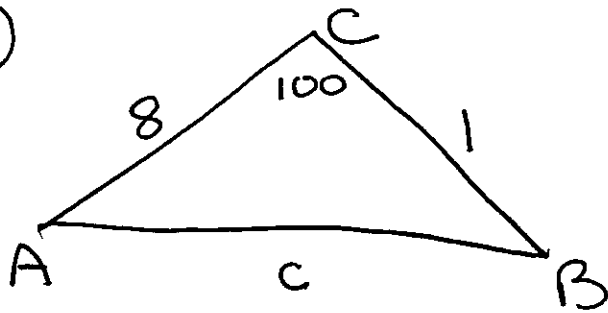
$$B = 25.2^\circ$$

$$180 - 106.6 - 25.2 =$$

$$48.2^\circ = C$$

8.3 cw day 1

③

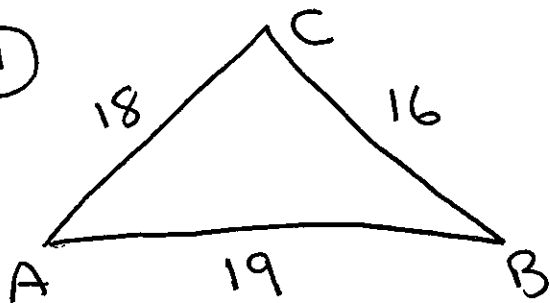


$$c^2 = 1^2 + 8^2 - 2(1)(8)\cos 100 \quad \boxed{C = 8.23}$$

$$\frac{\sin 100}{8.23} = \frac{\sin B}{8} \quad \boxed{B = 73.1^\circ}$$

$$180 - 100 - 73.1 = \boxed{A = 6.9^\circ}$$

④

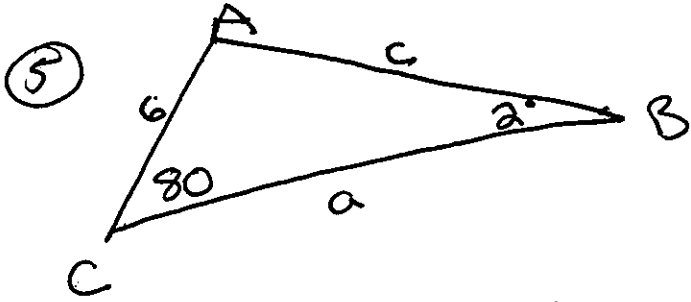


$$16^2 = 18^2 + 19^2 - 2(18)(19)\cos A \quad \boxed{A = 51.2^\circ}$$

$$\frac{\sin 51.2^\circ}{16} = \frac{\sin B}{18} \quad \boxed{B = 61.2^\circ}$$

$$180 - 51.2 - 61.2 = \boxed{C = 67.6^\circ}$$

8.3 cw day 1



$$\frac{\sin 2}{6} = \frac{\sin 80}{c}$$

$$c = 169.31$$

$$180 - 80 - 2 = 98$$

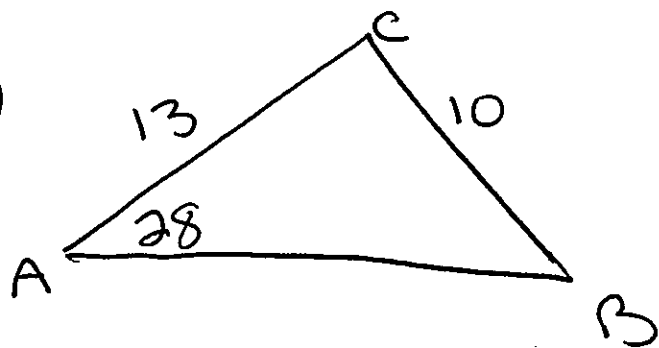
$$A = 98^\circ$$

$$\frac{\sin 98}{a} = \frac{\sin 2}{6}$$

$$a = 170.25$$

8.3 cw day 1

⑥



$$\frac{\sin 28}{10} = \frac{\sin B}{13}$$

$$B = 37.61$$

$$180 - 28 - 37.61$$

$$C = 114.39$$

$$\frac{\sin 28}{10} = \frac{\sin 114.39}{c}$$

$$c = 19.40$$

* Since only 1 angle, check for other solutions

$$180 - 37.61 = 142.39^\circ = B$$

$$180 - 28 - 142.39 = 9.61^\circ = C$$

$$\frac{\sin 9.61}{c} = \frac{\sin 28}{10}$$
$$c = 3.56$$