

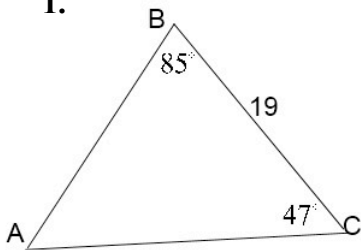
SHOW ALL WORK.

Complete Parts A & B OR Parts B & C

PART A:

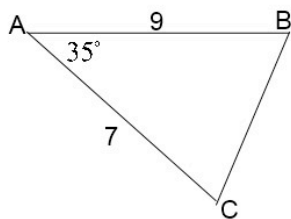
Solve $\triangle ABC$. Round answers to nearest tenth.

1.



2. $B = 25, a = 8, c = 6$

3.

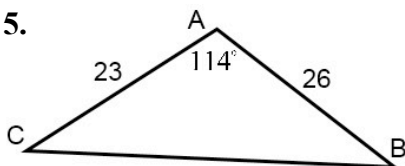


4. $A = 73, a = 18, b = 11$

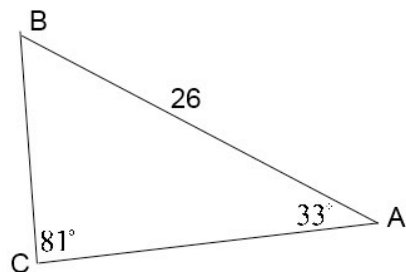
PART B:

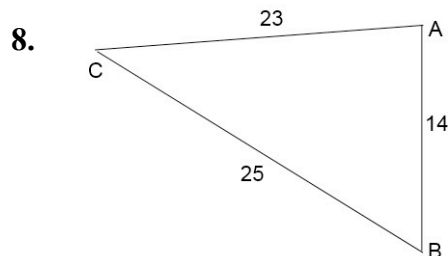
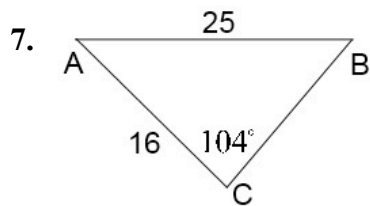
Solve $\triangle ABC$. Round answers to nearest tenth.

5.

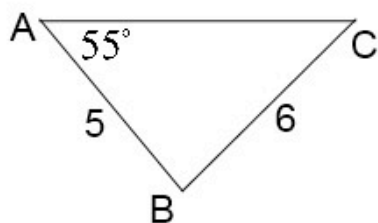


6.





9. Describe and correct the error in the measure of angle C in the triangle below.



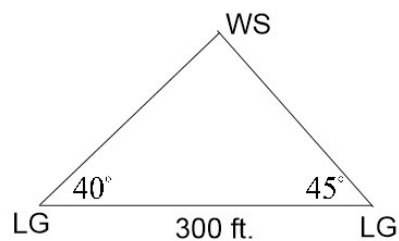
$$\frac{\sin C}{6} = \frac{\sin 55}{5}$$

$$\sin C = \frac{6 \sin 55}{5} \approx 0.9830$$

$$C \approx 79.4$$

10. You are on the observation deck of the Empire State Building looking at the Chrysler Building. When you turn 145 clockwise, you see the Statue of Liberty. You know that the Chrysler Building and the Empire State Building are about 0.6 miles apart. Estimate the distance between the Empire State Building and the Statue of Liberty.

11. Two lifeguards are watching a windsurfer. Use the information in the diagram to find the distance from each lifeguard to the windsurfer.



PART C: (use additional paper for responses.)

12. Use the law of cosines to show that the measure of each angle in an equilateral triangle is 60° .
Explain your reasoning.

13. An airplane flies 55° east of north from city A to city B, a distance of 470 miles. Another airplane flies 7° north of east from city A to city C, a distance of 890 miles. What is the distance between cities B and C?

Unit 6.2 Homework Answers

1. $A = 48$, $b \approx 25.5$, $c \approx 18.7$ 2. $A \approx 110.4$, $C \approx 44.6$, $b \approx 3.6$
3. $B \approx 50.8$, $C \approx 94.2$, $a \approx 5.2$ 4. $B \approx 35.8$, $C \approx 71.2$, $c \approx 17.8$
5. $B \approx 30.7$, $C \approx 35.3$, $a \approx 41.1$ 6. $B = 66$, $a \approx 14.3$, $b \approx 24.0$
7. $A \approx 37.6$, $B \approx 38.4$, $a \approx 15.7$ 8. $A \approx 81.1$, $B \approx 65.4$, $C \approx 33.5$

$$\frac{\sin C}{5} = \frac{\sin 55}{6}$$

9. The sides were not paired with their opposite angles. $\sin C = \frac{5 \sin 55}{6} \approx 0.6826$
 $C \approx 43.0$

$$x^2 = x^2 + x^2 - 2(x)(x) \cos A$$
$$-x^2 = -2x^2 \cos A$$

10. 5.2 miles

11. ≈ 193.6 feet, ≈ 212.9 feet

12. $\frac{-x^2}{-2x^2} = \cos A$

$$\frac{1}{2} = \cos A$$

$$60 = A$$

Since all sides are the same length, all angles will also be equal.

13. ≈ 524 miles