

MAT 182 – Homework 11
Sections 5.1 and 5.2

NAME _____

Directions: Show all work and write your final answer in the space provided.

1. If $\angle A = 23^\circ$, $\angle B = 110^\circ$ and $c = 50$ use the Law of Sines to find the remaining sides and angle of the triangle.
 $a =$ _____
 $b =$ _____
 $\angle C =$ _____
2. If $b = 60$, $c = 30$, and $\angle A = 70^\circ$ find the remaining side and angles.
 $a =$ _____
 $\angle B =$ _____
 $\angle C =$ _____
3. If $a = 10$, $b = 4$, and $c = 11$, find the measure of the largest angle. 3. _____
4. If $a = 10$, $b = 12$, and $c = 16$, find the measure of each angle.
 $\angle A =$ _____
 $\angle B =$ _____
 $\angle C =$ _____
5. If $\angle A = 22^\circ$, $\angle B = 95^\circ$ and $a = 420$ use the Law of Sines to find the remaining sides and angle of the triangle.
 $b =$ _____
 $c =$ _____
 $\angle C =$ _____
6. A parallelogram has sides of length 7 and 10, and one angle is 50° . Find the length of the diagonals. 6. _____
7. Points A and B are separated by a river. To find the distance between them, a surveyor locates a point C on land such that $\angle CAB = 48.6^\circ$. He also measures CA as 312 feet and CB as 527 feet. Find the distance between A and B. 7. _____

8. If $a = 1000$, $\angle B = 25^\circ$, and $\angle C = 98^\circ$ find the remaining sides and angle. $b =$ _____
 $c =$ _____
 $\angle A =$ _____
9. If $a = 14.5$, $c = 18.0$, and $\angle A = 46.5^\circ$ find the remaining side and angles. $b =$ _____
 $\angle B =$ _____
 $\angle C =$ _____
10. If $\angle B = 10^\circ$, $\angle C = 100^\circ$ and $c = 115$ use the Law of Sines to find the remaining sides and angle of the triangle. $a =$ _____
 $b =$ _____
 $\angle A =$ _____
11. A car travels along a straight road heading east for 1 hour, then travels for another 30 minutes on a road heading northeast. If the car has maintained a constant speed of 45 miles per hour, how far is the car from its starting point? 11. _____
12. If $a = 73.5$, $\angle B = 61^\circ$, and $\angle C = 83^\circ$ find the remaining sides and angle. $\angle A =$ _____
 $b =$ _____
 $c =$ _____
13. An antenna is supported by two guy wires, 165 feet and 180 feet long. Each wire is attached to the top of the antenna and anchored to the ground, at two anchor points on opposite sides of the antenna. The shorter wire makes an angle of 67° with the ground. How far apart are the anchor points? 13. _____
14. Two straight roads diverge at an angle of 65° . Two cars leave the intersection at 3:00 P.M., one traveling at 50 mi/hr and the other at 30 mi/hr. How far apart are the cars at 3:34 P.M.? 14. _____
15. A pilot is flying over a straight highway. She determines the angle of depression to cars, 5 miles apart, to be 33° and 48° . Find the elevation of the plane. 15. _____