Trig
Chpt 10 Review Part 1 Name:_____

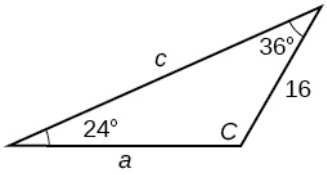
Non-right Triangles: Law of Sines

For the following exercises, assume α is opposite side a, β is opposite side $\mathbf{b}$, and γ is opposite side c. Solve each triangle, if possible. Round each answer to the nearest tenth.

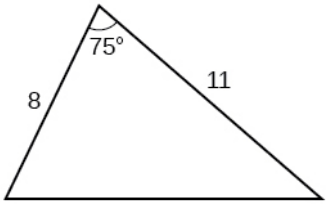
1. $\beta = 50°, a = 105, \mathbf{b} = 45$

2. $\alpha = 43.1°, a = 184.2, \mathbf{b} = 242.8$

3. Solve the triangle.



4. Find the area of the triangle.



5. A pilot is flying over a straight highway. He determines the angles of depression to two mileposts, 2.1 km apart, to be 25° and 49°, as shown in Figure 1. Find the distance of the plane from point A and the elevation of the plane.

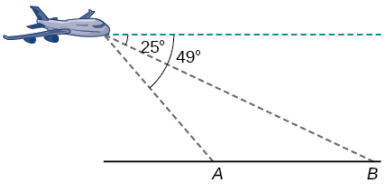


Figure 1

Non-right Triangles: Law of Cosines

6. Solve the triangle, rounding to the nearest tenth, assuming α is opposite side a, β is opposite side $\mathbf{b}$, and γ s opposite side c : $a = 4, \ \mathbf{b} = 6, c = 8.$

7. Solve the triangle in Figure 2, rounding to the nearest tenth.

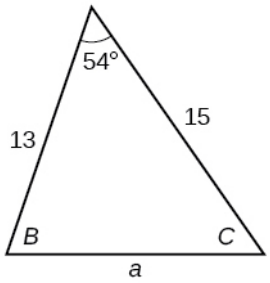


Figure 2

8. Find the area of a triangle with sides of length 8.3, 6.6, and 9.1.

9. To find the distance between two cities, a satellite calculates the distances and angle shown in Figure 3 (not to scale). Find the distance between the cities. Round answers to the nearest tenth.

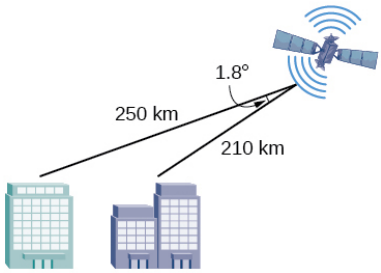


Figure 3

Polar Coordinates

10. Plot the point with polar coordinates $\left(3, \frac{\pi}{6}\right)$.

11. Plot the point with polar coordinates $\left(5, -\frac{2\pi}{3}\right)$

12. Convert $\left(6, -\frac{3\pi}{4}\right)$ to rectangular coordinates.

13. Convert $\left(-2, \frac{3\pi}{2}\right)$ to rectangular coordinates.

14. Convert $(7, -2)$ to polar coordinates.

15. Convert $(-9, -4)$ to polar coordinates.

For the following exercises, convert the given Cartesian equation to a polar equation.

16. $x = -2$

17. $x^2 + y^2 = 64$

18. $x^2 + y^2 = -2y$

For the following exercises, convert the given polar equation to a Cartesian equation.

19. $r = 7\cos\ \theta$

20. $r = \frac{-2}{4\cos\ \theta + \sin\ \theta}$

For the following exercises, convert to rectangular form and graph.

21. $\theta = \frac{3\pi}{4}$

22. $r = 5\sec\ \theta$