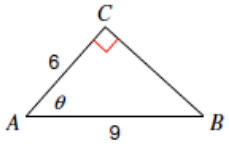
Pre Calculus
Study Guide: Chapter 5

1. Determine the reference angle of $-154°$.

2. Determine the coterminal angle that is between 0^0 and 360^0. State the quadrant in which the terminal side lies.
   a) 1072^0
   b) -832^0

3. Find the values of the six trigonometric functions for θ.



4. If $\sec\theta = \frac{7}{5}$, find $\cot\theta$.

5. Use the unit circle to find each value.
   a) $\tan(-240^0)$
   b) $\csc(150^0)$

6. Suppose θ is an angle whose terminal side lies in QII. If $\sec\theta = -\frac{\sqrt{6}}{2}$, find the value of the remaining 5 trigonometric functions of θ.

7. Solve for x if $0^0 \leq x \leq 360^0$.
   $\csc x = -\frac{2\sqrt{3}}{3}$

8. Evaluate $\cot(\arcsin\frac{4}{5})$. Assume that the angle is in Quadrant I.

9. The chair lift at a ski resort ascends at an angle of 25.67^0 and attains a vertical height of 1236 feet. How far does the chair lift travel up the side of the mountain? (Answer to the nearest tenth)

10. An observer in the top of a lighthouse determines that the angle of depressions to two sailboats directly in line with the lighthouse is 4.1^0 and 7.8^0. If the observer is 135 feet above sea level, find the distance between the boats.

11. Solve the triangle. (Use law of sine and/or law of cosine)

    a = 11, b = 13, c = 20

12. Find the area of the following triangle.
    a. a = 24, b = 52, c = 39
    b. $B = 102^0$, a = 84, c = 78
    c. $D = 34^0$, $E = 15^0$, d = 14

13. Determine the number of triangles. Then solve the triangle.

$$m\angle A = 60°, a = 9, and\ b = 10$$