

Accelerated Algebra 2  
Unit 6 SpringBoard Review

1) Identify all the possible values of  $\theta$ , where  $-360^\circ \leq \theta \leq 360^\circ$ , that has the following coordinates:

- a)  $(\frac{1}{2}, -\frac{\sqrt{3}}{2})$
- b)  $(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2})$
- c)  $(-1, 0)$

2) Evaluate the following:

- a)  $\tan(300^\circ)$
- b)  $\csc(\frac{5\pi}{6})$
- c)  $\sec(-\frac{5\pi}{3})$
- d)  $\cot(-540^\circ)$

3) Convert  $660^\circ$  to radians.

4) Convert  $\frac{9\pi}{4}$  to degrees.

5) When the plane had flown 4,150 feet from the airport where it had taken off, it had covered a horizontal distance of 3,660 feet. What is the angle at which the plane rose from the ground to the nearest degree?

6) Evaluate  $\tan^{-1}(\frac{-\sqrt{3}}{3})$ .

7) Find all the possible values of  $\sin^{-1}(\frac{-\sqrt{2}}{2})$ .

8) The distance  $y$  in feet of the tide from the lifeguard station can be modeled by:

$$y = -4\cos\left(\frac{\pi}{4}x\right) + 6, \text{ where } x \text{ is the number of hours after noon.}$$

a) Graph one period.

b) Identify the following features of the graph. What does it represent in the context of the problem?

- Amplitude
- Midline
- Minimum
- Maximum
- Period

9) Identify the transformations and graph  $y = -3\cos\left(6x + \frac{3\pi}{2}\right) - 5$

10) Write a sine and cosine function given the graph below.

