Adv Alg

Name_____
Date_____Pd____

Trig AA5 (Part II) Practice Test

C Level

1. A ferris wheel has a 34-meter diameter and makes one complete revolution every 2 minute. The ferris wheel moves in the counterclockwise position and starts at the bottom of the ferris wheel. The center of the ferris wheel is 20 meters above ground. A rider's height above ground, with respect to time, can be modeled with a trigonometric function. The ride starts at the very bottom of the ferris wheel.
   a. Graph a rider's height above ground while on the ferris wheel with respect to time. Label the axes and state the units.
   b. Write an equation that models a rider's height above ground with respect to time

Equation: _____

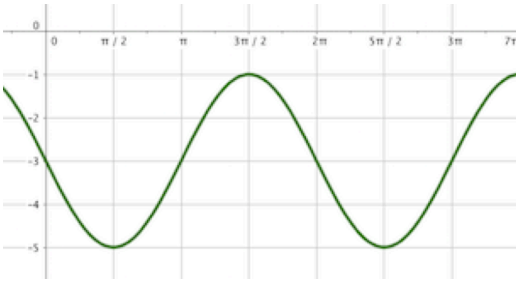
2. If cos (θ) = - .192, find sin (θ) for θ in quadrant II.

3. Matching: Match the graph to the equation by writing the corresponding letter next to the graph.

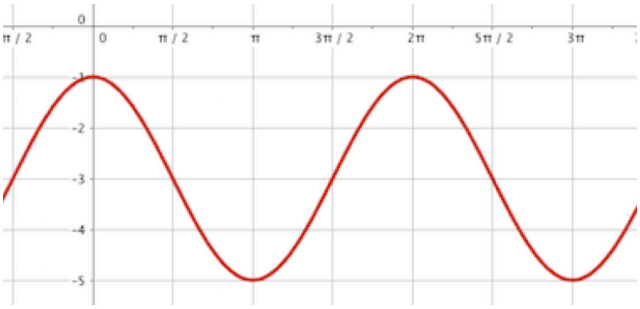
a) $y = -2\sin(x) - 3$ b) $y = 2\cos(x) - 3$ c) $y = 2\sin(x) - 3$

d) $y = -2\cos(x) - 3$ e) $y = \sin(2x) + 1$ f) $y = \sin\left(\frac{1}{2}x\right) + 1$

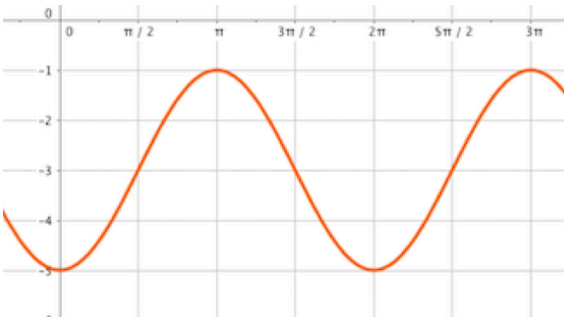
1. _____



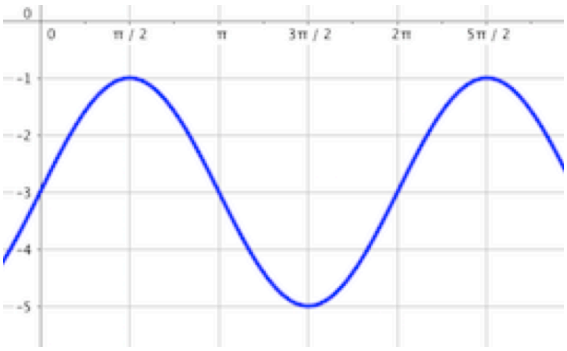
2. _____



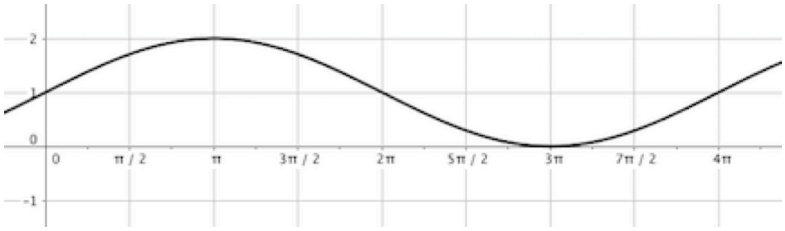
3. _____



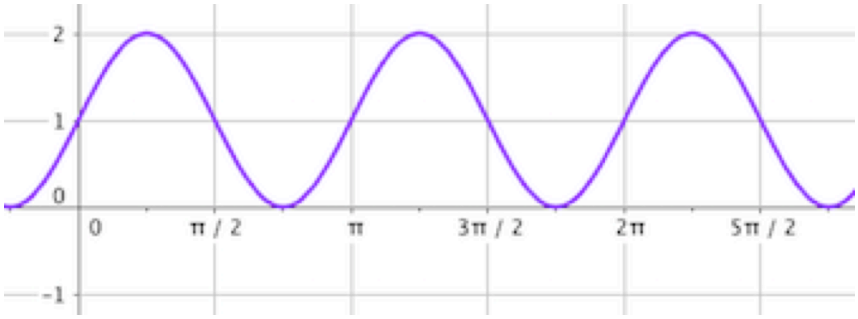
4. _____



5. _____



6. _____



B Level

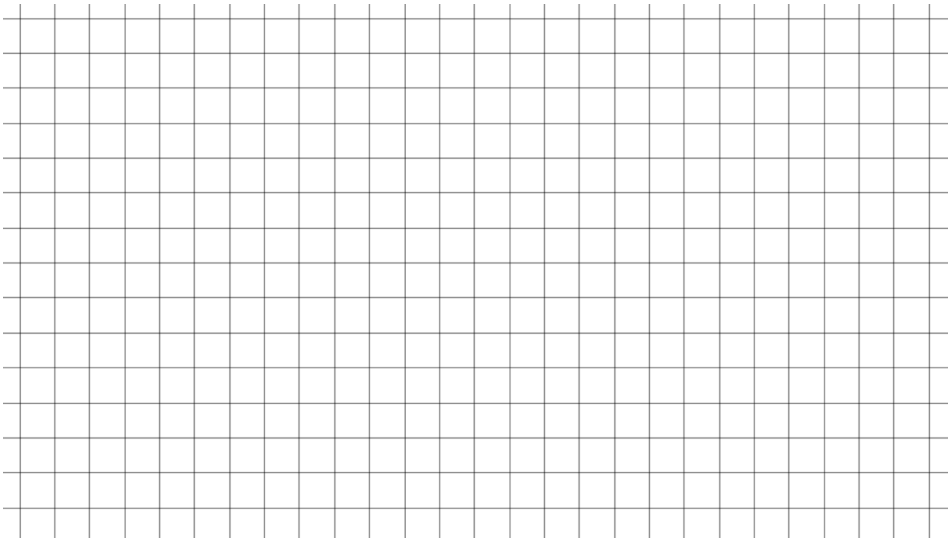
4. The very top of a ferris wheel measures 230 feet above ground. The diameter of the ferris wheel is 200 feet. The ferris wheel makes 6 revolutions per hour. The ride starts at the 12 o'clock position and rotates in the counterclockwise direction.

a. Graph a rider's height above ground while on the ferris wheel with respect to time. Label the axes and state the units.

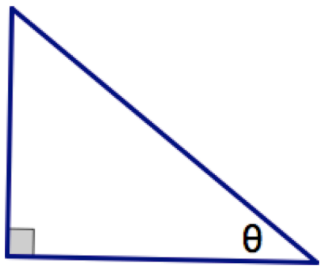
b. Write an equation that models a rider's height above ground with respect to time.

c. What height above ground will a rider reach after 11 seconds?

d. What time(s) will the rider be at a height of 88 ft during the first revolution?



5. Prove the Trig Identity $\cos^2\theta + \sin^2\theta = 1$. Show all your steps.



6. If $\sin(\theta) = -\frac{2}{5}$, for θ in quadrant IV.
   a. Find the exact value of $\cos(\theta)$
   b. Find the exact value of $\tan(\theta)$