Name: _____   Date: _____

SHOW ALL WORK FOR FULL CREDIT!!!

Part I Questions

1. Which of the following angles is coterminal with an angle of 130°, assuming both angles are drawn in the standard position?

   (1) 230° (3) 430°

   (2) -230° (4) -310°

   _____

2. If drawn in the standard position, which of the following angles terminates in the third quadrant?

   (1) 120° (3) -210°

   (2) -60° (4) 240°

   _____

3. A rotation angle, drawn in standard position, measures 1200°. In which quadrant does its terminal ray lie?

   (1) I   (3) III

   (2) II   (4) IV

   _____

4. Which of the following has the same reference angle as 150°?

   (1) 210° (3) 120°

   (2) 300° (4) 70°

   _____

5. The radian angle $\dfrac{3\pi}{4}$ is equivalent to

   (1) 67.5° (3) 270°

   (2) 135° (4) 325°

   _____

6. The angle $240°$ can be written equivalently as which of the following in the radian system?

(1) $\dfrac{7\pi}{6}$ (3) $\dfrac{3\pi}{2}$

(2) $\dfrac{5\pi}{4}$ (4) $\dfrac{4\pi}{3}$

_____

7. If an angle has a positive cosine but a negative sine then it must terminate in which of the following quadrants?

(1) I   (3) III

(2) II   (4) IV

_____

8. Given the function $f(x) = 6\sin(x)$ which of the following is the value of f(150)?

(1) $4\sqrt{2}$ (3) 3

(2) $3\sqrt{3}$ (4) 0

_____

9. An angle θ drawn in standard position terminates in the fourth quadrant. If $\sin\theta = -\dfrac{2}{5}$, then which of the following is the value of $\cos\theta$?

(1) $\dfrac{3}{5}$ (3) $-\dfrac{\sqrt{10}}{5}$

(2) $-\dfrac{4}{5}$ (4) $\dfrac{\sqrt{21}}{5}$

10. A rotation angle, drawn in standard position, measures 1020. In which quadrant does its terminal ray lie?

(1) I   (3) III

(2) II   (4) IV

. 11. A golfer swings a club about a pivot point. If the head of the club travels a distance of 26 feet and rotates through an angle of 5 radians, which of the following gives the distance the club head is from the pivot point?

(1) 1.7 feet

(3) 5.2 feet

(2) 2.6 feet

(4) 7.2 feet

12. The terminal ray of an angle drawn in standard position passes through the point $(0.28, -0.96)$, which lies on the unit circle. Which of the following represents the cosine of this angle?

(1) −0.96

(3) 0.28

(2) −0.68

(4) −0.29

13. Evaluate each of the following trigonometric expressions.

(a) $\sin\left(\dfrac{\pi}{2}\right)$

(b) $\sin\left(\dfrac{\pi}{3}\right)$

(c) $\cos\left(\dfrac{3\pi}{2}\right)$

(d) $\cos\left(\dfrac{3\pi}{4}\right)$

14. When drawn in standard position, an angle α has a terminal ray that lies in the second quadrant and whose sine is equal to $\dfrac{9}{41}$. Find the cosine of α in rational form (as a fraction).
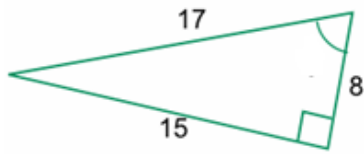
15. Convert each of the following common degree angles to angles in radians. Express your answers in exact terms of pi.
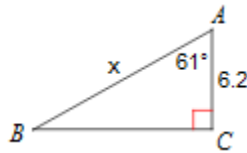
(a) 300°
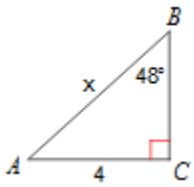
(b) 135°

(c) 270°

(d) 330°

16. Find a positive and negative co-terminal angle for the following
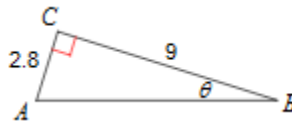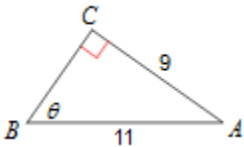
a) 82

b) -135

c) 537

17. Use SOH-CAH-TOA to find the sin, cos and tan of the given triangle

18. Find the missing side of the triangle using trigonometry

19. Find the missing angle using trigonometry

20. The distance from the center of a Ferris wheel to a person who is riding is 38 feet. What distance does a person travel if the Ferris wheel rotates through an angle of 4.25 radians?

(1) 80.75 feet   (3) 507 feet

(2) 42.5 feet   (4) 161.5 feet