This exam covered sections 6.1, 6.2, 6.3, 6.4, 6.5 up to question #31 of section 6.7

1. Which one of the following is not coterminal with the other four angles?
    All angles are in standard position.

    A. $-\dfrac{7\pi}{6}$

    B. $510°$

    C. $\dfrac{17\pi}{6}$

    D. $240°$

    E. $-210°$

2. The distance between two points, A and B, on Earth is measured along a circle having center C at the center of Earth and radius equal to the distance from C to the surface. Assume the diameter of Earth is approximately 8000 miles. Approximate, to the nearest mile, the distance between A and B if angle ACB has the measure 12º.

    A. 267 miles

    B. 838 miles

    C. 1676 miles

    D. 800 miles

    E. None of the above.

3. Express 125°34'18" as a decimal, to the nearest ten-thousandth of a degree.

    A. 125.5717º

    B. 125.3418º

    C. 125.8667º

    D. 125.5934º

    E. None of the above.

This exam covered sections 6.1, 6.2, 6.3, 6.4, 6.5 up to question #31 of section 6.7

4.   Find the value of $\csc\theta$.
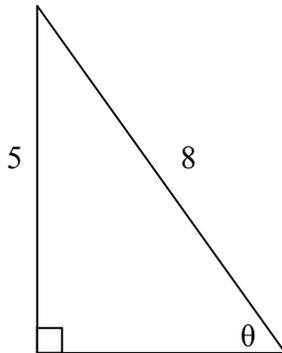
A. $\dfrac{8}{\sqrt{39}}$

B. $\dfrac{8}{5}$

C. $\dfrac{\sqrt{39}}{5}$

D. $\dfrac{\sqrt{39}}{8}$

E. None of the above.

5.   The Purdue Clock Tower stands 400 feet tall. One day, a bird places an apple on the top of the Tower. We are not sure how this happened, however, assume that it happened. Barney, a Purdue Policeman, is determined to shoot it down with his one and only bullet. Holding the gun 4 feet off the level ground, Barney points the gun at an angle of 48° with the horizontal and shoots the apple. How far did his bullet travel through the air before it hit the apple? Round to the nearest foot.

A. 592 feet

B. 533 feet

C. 357 feet

D. 299 feet

E. None of the above.

This exam covered sections 6.1, 6.2, 6.3, 6.4, 6.5 up to question #31 of section 6.7

6. Find the exact value of the $\cos\theta$ if θ is in standard position and the terminal side of θ is in quadrant II and is parallel to the line $3x + 5y = 20$.

A. $-\dfrac{5}{4}$

B. $-\dfrac{3}{4}$

C. $-\dfrac{3}{\sqrt{34}}$

D. $-\dfrac{5}{\sqrt{34}}$

E. None of the above.

7. Find the quadrant containing θ if $\sec\theta < 0$ and $\cot\theta > 0$.

A. Quadrant I

B. Quadrant II

C. Quadrant III

D. Quadrant IV

E. θ does not exist.

8. $\dfrac{\csc(-x)\cos(-x)}{\sin(-x)\cot(-x)}$ is equivalent to which of the following?
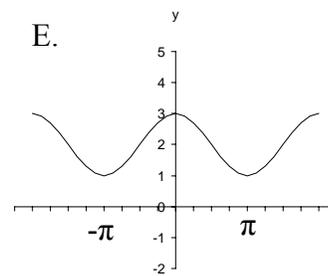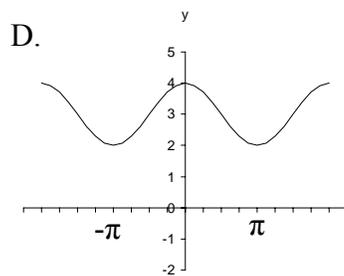
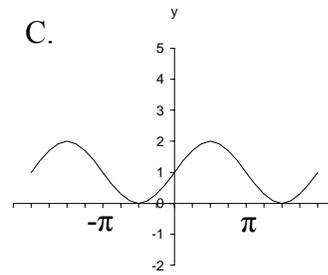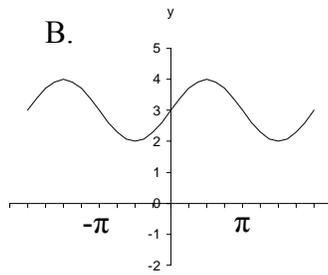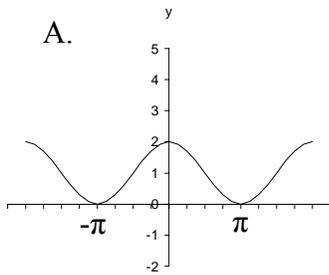A. $\csc(x)$

B $\cos(x)$

C. $-\csc(x)$

D. $-\cos(x)$

E. None of the above.

This exam covered sections 6.1, 6.2, 6.3, 6.4, 6.5 up to question #31 of section 6.7

9.   Which of the following is the graph of $y = 3 + \cos x$?

A.

B.

C.

D.

E.

10.   Let $P(t)$ be the point on the unit circle that corresponds to angle t, which is in standard position. If $P(t)$ has the rectangular coordinates $\left(-\dfrac{3}{5}, \dfrac{4}{5}\right)$, find the coordinates of $P(-t-\pi)$.

A. $\left(-\dfrac{3}{5}, \dfrac{4}{5}\right)$

B. $\left(-\dfrac{3}{5}, -\dfrac{4}{5}\right)$

C. $\left(\dfrac{3}{5}, -\dfrac{4}{5}\right)$
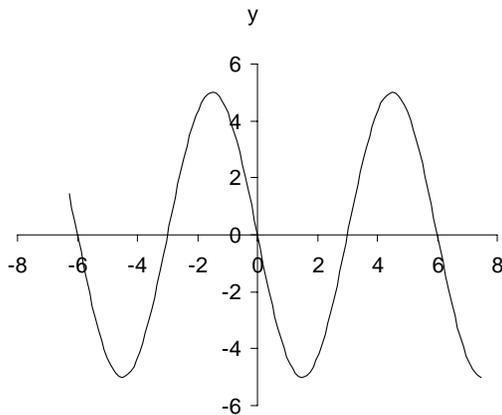
D. $\left(\dfrac{3}{5}, \dfrac{4}{5}\right)$

E. None of the above.

This exam covered sections 6.1, 6.2, 6.3, 6.4, 6.5 up to question #31 of section 6.7

11.   Approximate the value of $\cot(28°14')$, rounded to four decimal places.

A.   1.8624

B.   1.2442

C.   1.8697

D.   0.5369

E.   None of the above.

12.   Which of the following statement(s) is/are true about the equation $y = 6\sin\left(2x - \dfrac{3\pi}{4}\right)$?

I.   The period of the graph of y is $\dfrac{\pi}{2}$.

II.   The phase shift of the graph of y is $\dfrac{3\pi}{8}$.

III.   The graph of the equation crosses the y-axis above the x-axis.

A. I and II only

B. I and III only

C. II and III only

D. I, II and III

E. None of the above.

13.   Approximate all angles θ in the interval $[0, 2\pi)$ that satisfy the equation
       $\sin\theta = -0.5824$. Round your answer to the nearest 0.01 **radians**.

A. 0.62, 2.52

B. 0.62, 3.76

C. 2.52, 3.76

D. 2.52, 5.66

E. None of the above.

This exam covered sections 6.1, 6.2, 6.3, 6.4, 6.5 up to question #31 of section 6.7

14. Which of the following is an equation of the graph?

A. $y = 5\sin\left(3x + \dfrac{9}{\pi}\right)$

B. $y = 5\sin\left(2x + \dfrac{\pi}{4}\right)$

C. $y = 5\sin\left(\dfrac{\pi}{3}x + \dfrac{9}{\pi}\right)$

D. $y = 5\sin\left(\dfrac{\pi}{2}x + \pi\right)$

E. $y = 5\sin\left(\dfrac{\pi}{3}x + \pi\right)$

15. Little Johnnie is not a nice boy. Holding the family cat 5 feet off the ground, he throws the cat to the floor. Upon landing safely, the cat immediately turns and looks up at the point from which he was thrown. If the cat is looking through an angle of elevation of 53°, how far did the cat land from a point on the level floor directly beneath Little Johnnie? Round your answer to the nearest tenth of a foot. (No cats were injured in the writing of this question.)
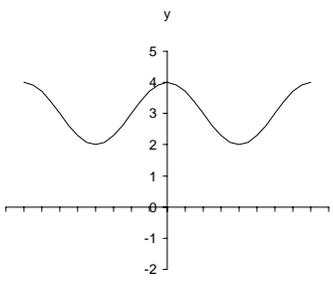
A. 6.6 feet

B. 3.8 feet

C. 6.3 feet

D. 4.0 feet

E. None of the above.

This exam covered sections 6.1, 6.2, 6.3, 6.4, 6.5 up to question #31 of section 6.7

	Answers	Letter
1	$240°$	D
2	838 miles	B
3	$125.5717°$	A
4	$\dfrac{8}{5}$	B
5	533 feet	B
6	$-\dfrac{5}{\sqrt{34}}$	D
7	Quadrant III	C
8	$-\csc(x)$	C
9		D
10	$\left(\dfrac{3}{5},\dfrac{4}{5}\right)$	D
11	1.8624	A
12	II only None of the above	E
13	3.76, 5.66 None of the above	E
14	$y = 5\sin\left(\dfrac{\pi}{3}x + \pi\right)$	E
15	3.8 feet	B