

This exam covers Sections 6.1, 6.2, 6.3, 6.4 and 6.5

1. Which one of the following angles is coterminal with $\frac{7}{6}$?
(All angles are in standard position.)
- A. 570°
 - B. -30°
 - C. 150°
 - D. -210°
 - E. None of these.
2. Find the angle that is supplementary to $37^\circ 12' 51''$.
- A. $53^\circ 48' 9''$
 - B. $140^\circ 48' 9''$
 - C. $52^\circ 47' 9''$
 - D. $141^\circ 48' 9''$
 - E. None of these.
3. Express $\pi = 2.2$ in terms of degrees, minutes and seconds, to the nearest second.
- A. $2^\circ 12' 0''$
 - B. $2^\circ 33' 33''$
 - C. $126^\circ 5' 7''$
 - D. $126^\circ 3' 3''$
 - E. None of these.

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4. $(\tan \theta + \sec \theta)(\cot \theta - \cos \theta)$ is equivalent to which of the following?

A. $2 + \csc \theta - \sin \theta$

B. $\sec \theta - \cos \theta$

C. $\csc \theta - \sin \theta$

D. $2 + \sec \theta - \cos \theta$

E. $\frac{\cos^4 \theta + \sin^2 \theta}{\sin \theta \cos^2 \theta}$

5. Which quadrant contains θ if $\cos \theta > 0$ and $\sec \theta < 0$?

A. QI

B. QII

C. QIII

D. QIV

E. does not exist.

6. If $\tan \theta = -\frac{1}{2}$ and $\csc \theta > 0$, find $\sin \theta$.

A. $\frac{1}{\sqrt{5}}$

B. $-\frac{2}{\sqrt{5}}$

C. $-\frac{1}{\sqrt{5}}$

D. $\frac{2}{\sqrt{5}}$

E. None of these.

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7. As $x \rightarrow \frac{3}{2}^+$, $\tan x$ _____

A. Undefined

B.

C. 0

D. 1

E. -

8. For the graph of $y = \cos x - 2$, which of the following is/are true?

I. The graph crosses the x -axis at $\frac{\pi}{2}$.

II. The graph crosses the y -axis at -1 .

III. The range of the graph is $[-2, 0]$.

A. I

B. II

C. III

D. I and II

E. II and III

9. If $\theta = 2.3$, what is the reference angle, θ_R ?

A. 0.84

B. 3.98

C. 0.73

D. 2.30

E. None of these.

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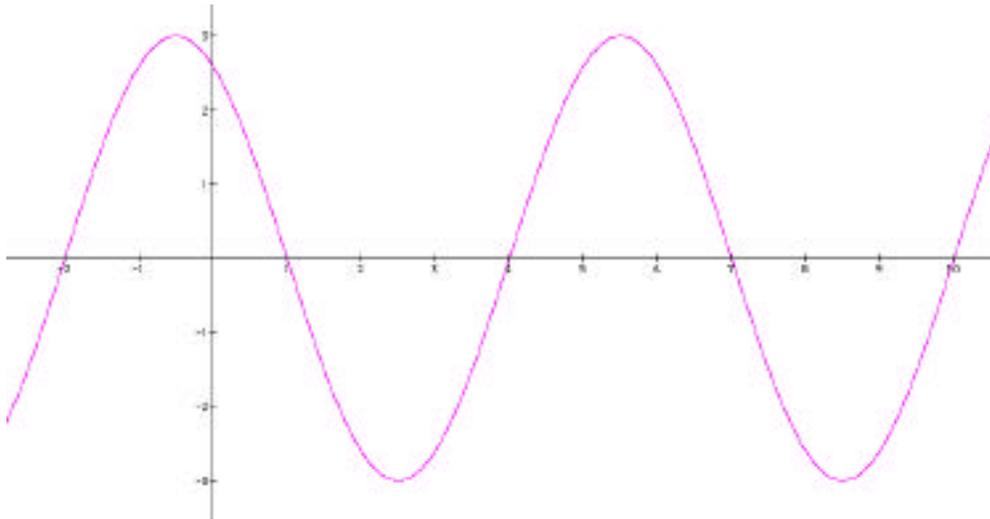
10. Approximate $\sec 157^\circ 12'$ to four decimal places.
- A. 1.0000
 - B. -2.3789
 - C. 2.5805
 - D. -1.0848
 - E. None of these.
11. A hunter, on level ground, looks up and sees a deer standing on the edge of a cliff. If the hunter is 300 meters from the base of the cliff and the angle between the horizon and the hunter's line of sight to the deer is 37° , how far will her arrow have to travel to hit the deer? (No animals were harmed in the writing of this problem.)
- A. 181 meters
 - B. 398 meters
 - C. 498 meters
 - D. 240 meters
 - E. 376 meters
12. Approximate, to the nearest 0.0001 radians, all angles in the interval $[0, 2\pi]$ that satisfy the equation $\tan \theta = -4.5678$.
- A. 4.4969, 1.3553
 - B. 1.7863, 4.9279
 - C. 1.3553, 1.7863
 - D. 1.3553, 4.9279
 - E. None of these.

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13. Find the degree measure of the central angle subtended by a circular arc of 10 cm on a circle with a radius of 2.3 cm. Round your answer to two decimal places.

- A. 230.00°
- B. 4.35°
- C. 13.18°
- D. 249.11°
- E. None of these.

14. Find the equation that best fits the graph.



- A. $y = 3\sin \frac{2}{3}x + \frac{2}{3}$
- B. $y = 3\sin \frac{2}{3}x + \frac{4}{3}$
- C. $y = 3\sin \frac{1}{3}x + \frac{2}{3}$
- D. $y = 3\sin \frac{2}{3}x + \frac{3}{3}$
- E. $y = 3\sin \frac{1}{3}x + \frac{6}{3}$

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1. 570°
2. None of these.
3. $126^\circ 3' 3''$
4. $\csc - \sin$
5. does not exist.
6. $\frac{1}{\sqrt{5}}$
7. $-$
8. Π
9. 0.84
10. -1.0848
11. 376 meters
12. 1.7863, 4.9279
13. 249.11°
14. $y = 3\sin \frac{x}{3} + \frac{2}{3}$