

1) Which of the following angles is NOT coterminal with 300° ?

- A) $-\frac{\pi}{3}$ B) -30° C) 660° D) -420° E) $\frac{11}{3}$

2) Find the angle that is supplementary to $57^\circ 42' 59''$.

- A) $31^\circ 18' 1''$ B) $122^\circ 28' 1''$ C) $122^\circ 17' 1''$ D) $123^\circ 12' 1''$ E) $32^\circ 17' 1''$

3) Find all of the values of x , in the interval $[0, 2\pi)$, which satisfy the equation $\cot x = -8.125$. Round your answer to two decimal places.

- A) 6.16, 3.26 B) 0.28, 3.42 C) 0.12, 3.26 D) 6.16, 3.02 E) 0.12, 3.02

- 4) Which of the following is equivalent to $\cos(-x)\sin(-x)\sec(x)$?
- A) $\sin x$ B) $\cos x$ C) $-\cos x$ D) $-\sin x$ E) $\tan x$
- 5) Approximate the value of $\cos 50^\circ 18'$. Round your answer to 4 decimal places.
- A) 0.9994 B) 0.6414 C) 0.6388 D) 0.6404 E) 0.7681
- 6) Find the area of the sector determined by the central angle θ , if θ is subtended by an arc of length 7.5 cm on a circle of radius 2.3 cm. Round your answer to three decimal places.
- A) 3.750 cm^2 B) 5.943 cm^2 C) 3.261 cm^2 D) 17.250 cm^2 E) 8.625 cm^2
- 7) The values of y of the graph of $y = 2 + \cos x$ vary from:
- A) -3 to 3 B. 1 to 3 C. 0 to 2 D. -3 to -1 E. -2 to 2

- 8) Find the exact value of $\sin \theta$, if $\tan \theta = \frac{7}{4}$ and $\cos \theta < 0$.
- A) $\frac{4}{\sqrt{33}}$ B) $-\frac{7}{\sqrt{65}}$ C) $-\frac{7}{\sqrt{33}}$ D) $-\frac{4}{\sqrt{65}}$ E) $\frac{7}{\sqrt{65}}$
- 9) The height of a building is known to be 435 feet. From a point away from the base of the building, along level ground, Bill finds the angle of elevation of the top of the building is 67° . How far is Bill from the base of the building? Round your answer to the nearest tenth of a foot.
- A) 400.4 feet B) 1113.3 feet C) 1024.8 feet D) 184.6 feet E) 472.6 feet
- 10) A 72-foot ramp reaches from a point on the ground to a point 13 feet above the ground. What is the degree measure of the angle between the ground and the ramp? Round your answer to one-decimal place.
- A) 10.2° B) 79.6° C) 5.5° D) 10.4° E) 30.0°

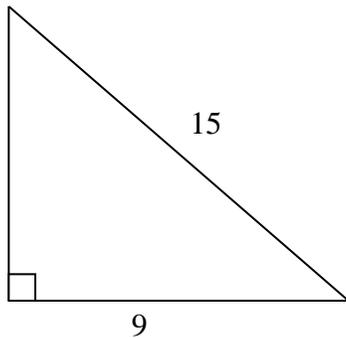
11) As $x \rightarrow \frac{\pi}{2}^+$, $\tan x$ _____?

- A) $-\infty$ B) $-\infty$ C) 0 D) 1 E) -1

12) What is the reference angle, θ_R , of $\theta = 8$? Round your answer to two decimal places.

- A) $\theta_R = 1.72$ B) $\theta_R = 4.86$ C) $\theta_R = 1.42$ D) $\theta_R = -1.72$ E) $\theta_R = -1.42$

13) Given the right triangle below, which of the following is true?



- A) $\csc \theta = \frac{15}{12}$ B) $\sec \theta = \frac{9}{15}$ C) $\tan \theta = \frac{9}{12}$ D) $\cot \theta = \frac{15}{9}$ E) $\cos \theta = \frac{12}{9}$

14) Which of the following is the graph of $y = 2 \sin \left(x + \frac{\pi}{6} \right)$?

