MA 154   Exam 1   Spring 2002

This exam covers Sections 6.1, 6.2, 6.3, 6.4 and 6.5 (up to question 28)

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

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

2)   Find the angle that is supplementary to 57° 42' 59".

   A) 31° 18' 1"   B) 122° 28' 1"   C) 122° 17' 1"   D) 123° 12' 1"   E) 32° 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 $\cos 50°18'$. 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 , if   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 , if tan $= \dfrac{7}{4}$ and cos < 0.

A) $\dfrac{4}{\sqrt{33}}$

B) $-\dfrac{7}{\sqrt{65}}$

C) $-\dfrac{7}{\sqrt{33}}$

D) $-\dfrac{4}{\sqrt{65}}$

E) $\dfrac{7}{\sqrt{65}}$

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 of 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 $x \to \dfrac{\pi^{+}}{2}$, $\tan x \to$ _____?

  A) ∞ 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) $\theta_R = -1.42$
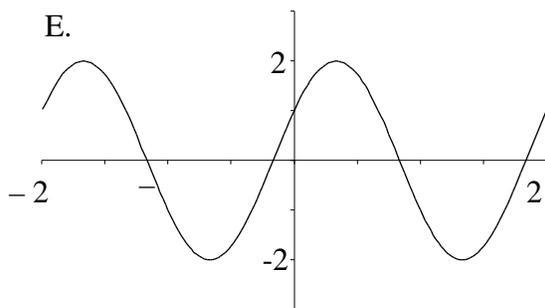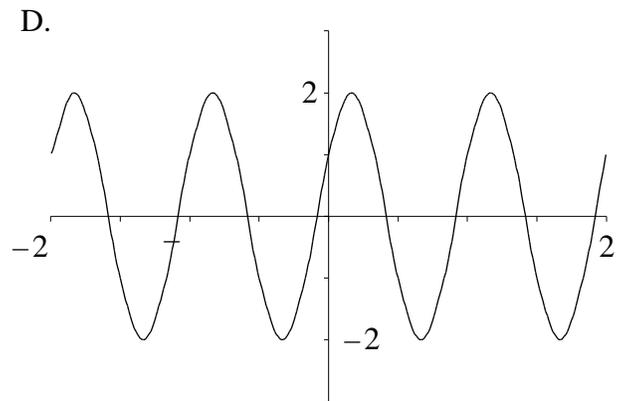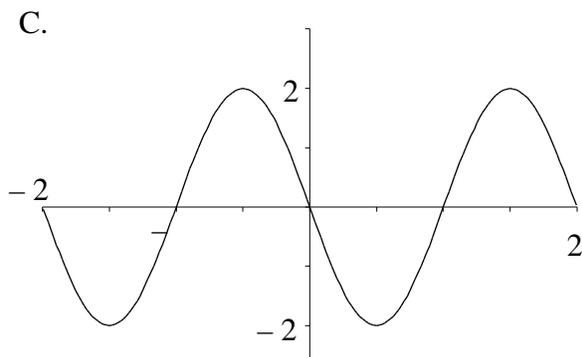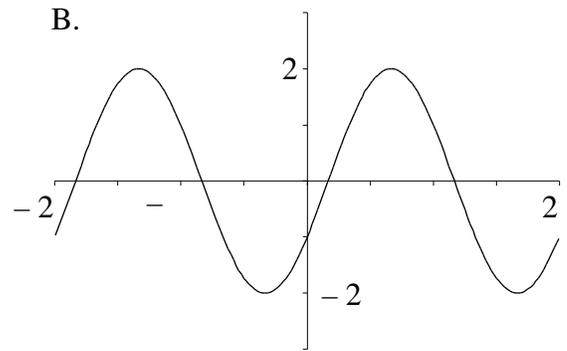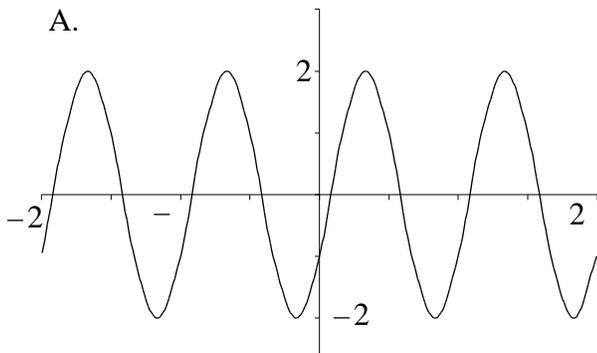
13)   Given the right triangle below, which of the following is true?
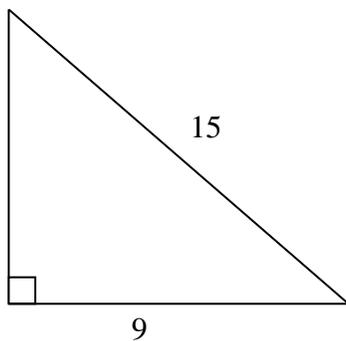
A) $\csc\theta = \dfrac{15}{12}$ B) $\sec\theta = \dfrac{9}{15}$ C) $\tan\theta = \dfrac{9}{12}$ D) $\cot\theta = \dfrac{15}{9}$ E) $\cos\theta = \dfrac{12}{9}$

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

A.

B.

C.

D.

E.

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Exam answers.

1)   –30°

2)   122° 17' 1"

3)   6.16, 3.02

4)   – sin x

5)   0.6388

6)   8.625 cm^2

7)   1 to 3

8) $-\dfrac{7}{\sqrt{65}}$

9)   184.6 feet

10) 10.4°

11) –

12) $_R$ = 1.42

13) csc $= \dfrac{15}{12}$

14)