

Review for Exam 3

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Find a positive angle and a negative angle that are coterminal to the given angle.

1) 53° 1) _____
A) $413^\circ; -307^\circ$ B) $233^\circ; -127^\circ$ C) $413^\circ; -127^\circ$ D) $143^\circ; -37^\circ$

2) -41° 2) _____
A) $319^\circ; -401^\circ$ B) $139^\circ; -221^\circ$ C) $319^\circ; -221^\circ$ D) $139^\circ; -131^\circ$

3) $\frac{\pi}{6}$ 3) _____
A) $\frac{13\pi}{6}; -\frac{\pi}{6}$ B) $\frac{\pi}{6} + 360^\circ; \frac{\pi}{6} - 360^\circ$
C) $\frac{13\pi}{6}; -\frac{11\pi}{6}$ D) $\frac{7\pi}{6}; -\frac{5\pi}{6}$

Convert the angle from degree measure to radian measure. Round to the nearest hundredth of a radian when appropriate.

4) 90° 4) _____
A) $\frac{\pi}{8}$ B) $\frac{\pi}{2}$ C) $\frac{\pi}{3}$ D) $\frac{\pi}{4}$

5) -60° 5) _____
A) $-\frac{\pi}{3}$ B) $-\frac{\pi}{2}$ C) $-\frac{\pi}{4}$ D) $-\frac{\pi}{5}$

6) 810° 6) _____
A) 9π B) $-\frac{9\pi}{2}$ C) $-\frac{9\pi}{4}$ D) $\frac{9\pi}{2}$

Convert the angle from radian measure to degree measure. Round to the nearest hundredth of a degree when appropriate.

7) $\frac{9\pi}{2}$ 7) _____
A) $40\pi^\circ$ B) 1620° C) 810° D) 160°

8) $-\frac{\pi}{3}$ 8) _____
A) $-\frac{\pi^\circ}{3}$ B) -60° C) $-60\pi^\circ$ D) -1.05°

9) $\frac{9\pi}{4}$ 9) _____
A) 405° B) $80\pi^\circ$ C) 810° D) 160°

Solve the problem.

10) Find the complementary angle to $\theta = 68.3^\circ$.

- A) 428.3° B) 111.7° C) 21.7° D) 158.3°

10) _____

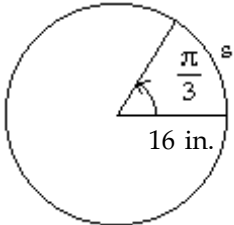
11) Find the supplementary angle to $\theta = 112^\circ$.

- A) 472° B) 292° C) 68° D) -22°

11) _____

12) Use the formula $s = r\theta$ to determine the value of s in the figure. Round to two decimal places.

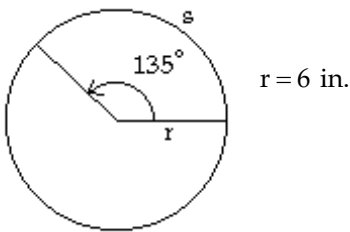
12) _____



- A) 0.07 in. B) 916.73 in. C) 16.76 in. D) 33.51 in.

13) Use the formula $s = r\theta$ to determine the value of s in the figure. Round to two decimal places, if necessary.

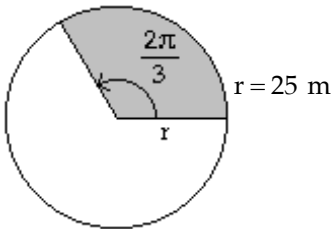
13) _____



- A) 2.36 in. B) 14.14 in. C) 810 in. D) 2.55 in.

14) Find the area of the shaded sector. Round to one decimal place.

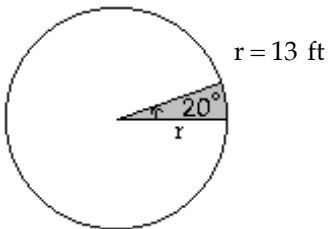
14) _____



- A) 654.5 m^2 B) 1309.0 m^2 C) 54.8 m^2 D) 26.2 m^2

15) Find the area of the shaded sector. Round to one decimal place.

15) _____



- A) 2.3 ft^2 B) 29.5 ft^2 C) 59.0 ft^2 D) 0.4 ft^2

Use the given trigonometric function value of θ to find the requested trigonometric function value of the acute angle θ . Rationalize the denominator where necessary.

16) $\sin \theta = \frac{4}{5}$ Find $\tan \theta$. 16) _____

- A) $\frac{5}{3}$ B) $\frac{3}{4}$ C) $\frac{5}{4}$ D) $\frac{4}{3}$

17) $\cot \theta = \frac{3}{4}$ Find $\sin \theta$. 17) _____

- A) $\frac{4}{5}$ B) $\frac{3}{5}$ C) $\frac{4}{3}$ D) $\frac{5}{3}$

Rewrite the expression in terms of $\sin \theta$ and $\cos \theta$.

18) $\tan \theta(\cot \theta - \cos \theta)$ 18) _____

- A) 0 B) 1 C) $-\sec^2 \theta$ D) $1 - \sin \theta$

19) $\frac{\tan \theta}{\sec \theta}$ 19) _____

- A) $\sin \theta$ B) $\sec^2 \theta$ C) $\cos^3 \theta$ D) $\tan^2 \theta$

20) $\cos \theta \tan \theta$ 20) _____

- A) $\sin \theta$ B) $\cot \theta$ C) $\cos \theta$ D) 1

Use the fundamental identities to simplify the expression.

21) $\sin^2 \theta + \tan^2 \theta + \cos^2 \theta$ 21) _____

- A) $\cos^3 \theta$ B) $\tan^2 \theta$ C) $\sec^2 \theta$ D) $\sin \theta$

22) $\frac{\cos^2 \theta}{\sin^2 \theta} + \csc \theta \sin \theta$ 22) _____

- A) 1 B) $\sec^2 \theta$ C) $\csc^2 \theta$ D) $\tan^2 \theta$

Rewrite the expression in terms of $\sin \theta$ and $\cos \theta$.

23) $\frac{\sin \theta \cos \theta}{\tan \theta}$ 23) _____

- A) $\sin^2 \theta$ B) $\sin \theta$ C) $\cos^2 \theta$ D) $\cos \theta$

Use a calculator to find the approximate value of the expression. Round the answer to two decimal places.

24) $\sin 42^\circ$ 24) _____

- A) 0.67 B) 0.81 C) -0.78 D) -0.92

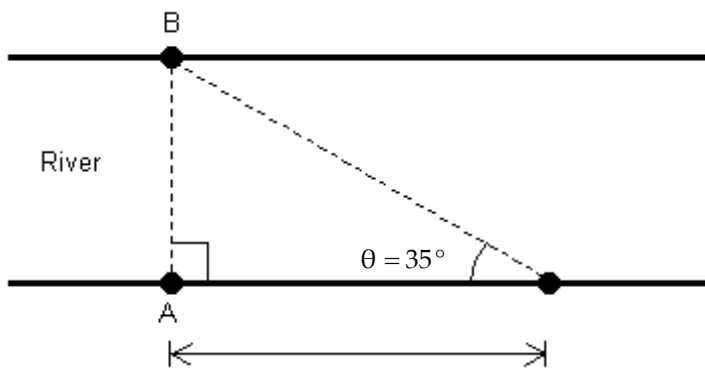
25) $\cos 23^\circ$ 25) _____

- A) -0.53 B) 0.92 C) -0.44 D) 0.83

- 26) $\tan 43^\circ$ 26) _____
 A) 0.93 B) 1.01 C) -1.42 D) -1.50
- 27) $\cos \frac{2\pi}{5}$ 27) _____
 A) 0.19 B) 0.31 C) 1.00 D) 1.12

Solve the problem.

- 28) Find the height of a pine tree that casts a 45-foot shadow on the ground assuming that the angle of elevation from the point on the ground at the tip of the shadow to the sun is 69° . Round your answer to the nearest foot. 28) _____
 A) 42 ft B) 16 ft C) 117 ft D) 17 ft
- 29) A kite is currently flying at an altitude of 13 meters above the ground. If the angle of elevation from the ground to the kite is 32° , find the length of the kite string to the nearest meter. 29) _____
 A) 21 m B) 15 m C) 25 m D) 7 m
- 30) A conservation officer needs to know the width of a river in order to set instruments correctly for a study of pollutants in the river. From point A, the conservation officer walks 95 feet downstream and sights point B on the opposite bank to determine that $\theta = 35^\circ$ (see figure). How wide is the river? 30) _____



- A) 67 ft B) 116 ft C) 136 ft D) 54 ft

A point on the terminal side of angle θ is given. Find the exact value of the indicated trigonometric function.

- 31) (15, 20) Find $\sin \theta$. 31) _____
 A) $\frac{4}{3}$ B) $\frac{3}{5}$ C) $\frac{4}{5}$ D) $\frac{3}{4}$
- 32) (12, 16) Find $\cos \theta$. 32) _____
 A) $\frac{3}{4}$ B) $\frac{3}{5}$ C) $\frac{4}{5}$ D) $\frac{4}{3}$
- 33) (-20, 48) Find $\sin \theta$. 33) _____
 A) $-\frac{5}{13}$ B) $-\frac{12}{13}$ C) $\frac{5}{13}$ D) $\frac{12}{13}$

34) $(-4, -3)$ Find $\sec \theta$. 34) _____
 A) $\frac{5}{3}$ B) $-\frac{5}{4}$ C) $\frac{3}{4}$ D) $-\frac{4}{5}$

35) $(-6, 2)$ Find $\tan \theta$. 35) _____
 A) -1 B) -3 C) $-\frac{1}{3}$ D) $\frac{1}{3}$

Name the quadrant in which the angle θ lies.

36) $\tan \theta > 0, \sin \theta < 0$ 36) _____
 A) I B) II C) III D) IV

37) $\sin \theta > 0, \cos \theta < 0$ 37) _____
 A) I B) II C) III D) IV

38) $\cot \theta < 0, \cos \theta > 0$ 38) _____
 A) I B) II C) III D) IV

39) $\sin \theta > 0, \cos \theta > 0$ 39) _____
 A) I B) II C) III D) IV

Find the reference angle of the given angle.

40) 96° 40) _____
 A) 16° B) 84° C) 6° D) 94°

41) 445° 41) _____
 A) 175° B) 85° C) 95° D) 5°

42) -51° 42) _____
 A) 129° B) 141° C) 39° D) 51°

Use the reference angle to find the exact value of the expression. Do not use a calculator.

43) $\sin 765^\circ$ 43) _____
 A) $-\frac{\sqrt{2}}{2}$ B) $\frac{1}{2}$ C) $-\frac{1}{2}$ D) $\frac{\sqrt{2}}{2}$

44) $\sin \frac{-2\pi}{3}$ 44) _____
 A) $-\frac{1}{2}$ B) -1 C) $-\frac{\sqrt{3}}{2}$ D) $\frac{\sqrt{3}}{2}$

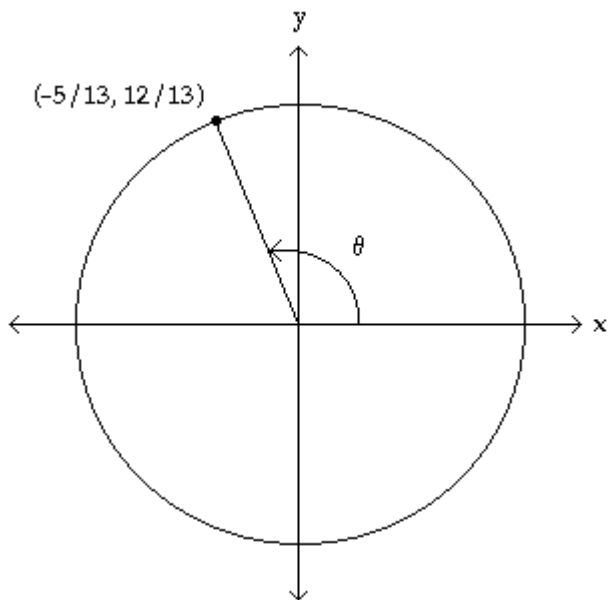
Find the exact value of the indicated trigonometric function of θ .

45) $\sec \theta = \frac{9}{2}, \theta$ in quadrant IV Find $\tan \theta$. 45) _____
 A) $-\frac{\sqrt{77}}{9}$ B) $-\frac{\sqrt{77}}{2}$ C) $-\sqrt{77}$ D) $-\frac{9}{2}$

The figure shows angle θ in standard position with its terminal side intersecting the unit circle. Evaluate $\sin \theta$ and $\cos \theta$.

46)

46) _____



A) $\sin \theta = \frac{13}{12}$, $\cos \theta = -\frac{13}{5}$

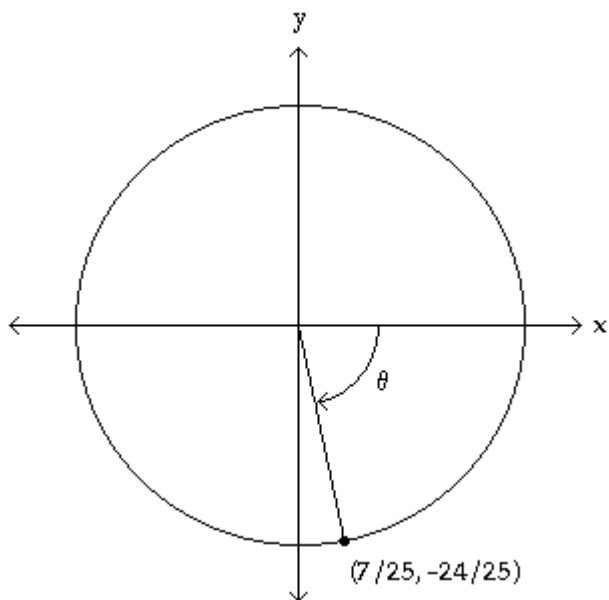
B) $\sin \theta = -\frac{12}{5}$, $\cos \theta = -\frac{5}{12}$

C) $\sin \theta = -\frac{5}{13}$, $\cos \theta = \frac{12}{13}$

D) $\sin \theta = \frac{12}{13}$, $\cos \theta = -\frac{5}{13}$

47)

47) _____



A) $\sin \theta = -\frac{24}{25}$, $\cos \theta = \frac{7}{25}$

B) $\sin \theta = -\frac{25}{24}$, $\cos \theta = \frac{25}{7}$

C) $\sin \theta = -\frac{24}{7}$, $\cos \theta = -\frac{7}{24}$

D) $\sin \theta = \frac{7}{25}$, $\cos \theta = -\frac{24}{25}$

Find the exact value. If the value of the function is not defined, write undefined.

48) $\cos(-180^\circ)$

A) 0

B) Undefined

C) -1

D) 1

48) _____

49) $\sec 270^\circ$

A) 0

B) -1

C) Undefined

D) $\frac{2\sqrt{3}}{3}$

49) _____

50) $\cot 270^\circ$

A) $\frac{\sqrt{2}}{2}$

B) -1

C) 0

D) Undefined

50) _____

51) $\cot(-90^\circ)$

A) 0

B) Undefined

C) $\frac{\sqrt{2}}{2}$

D) -1

51) _____

Match the given function to its graph.

52) 1) $y = \sin x$

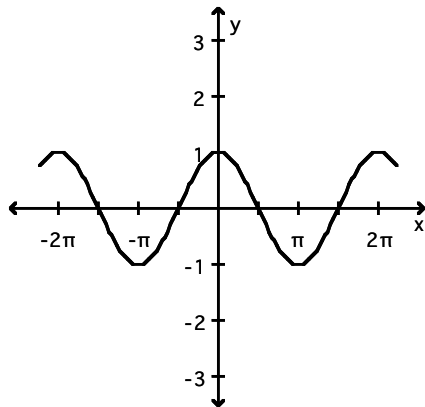
2) $y = \cos x$

3) $y = -\sin x$

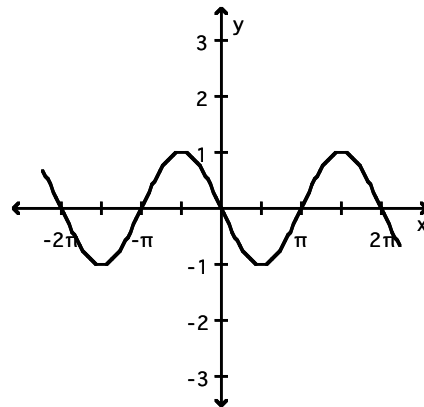
4) $y = -\cos x$

A

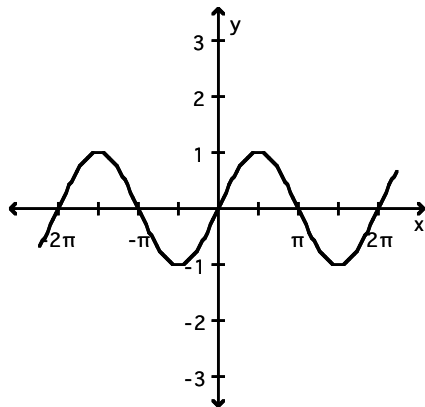
52) _____



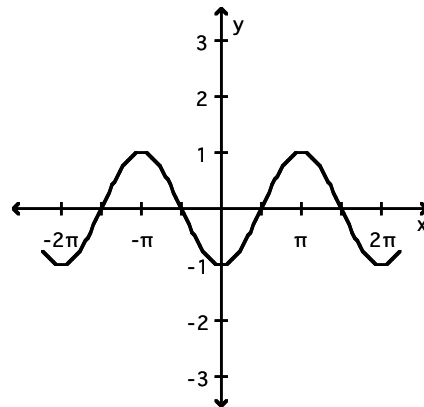
B



C



D



A) 1C, 2A, 3B, 4D

C) 1A, 2B, 3C, 4D

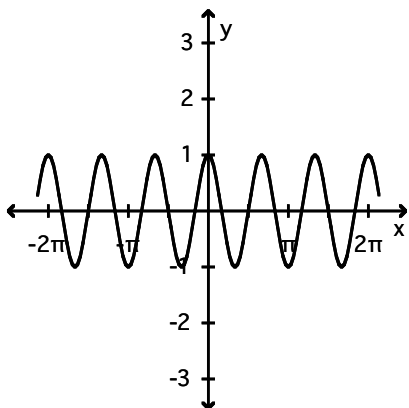
B) 1A, 2D, 3C, 4B

D) 1B, 2D, 3C, 4A

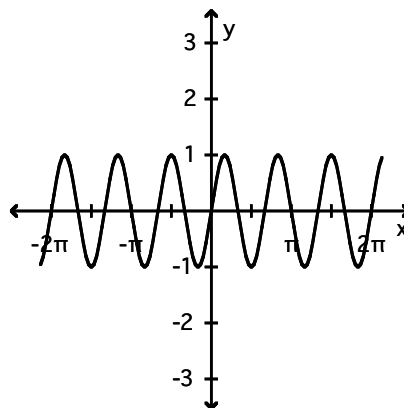
- 53) 1) $y = \sin 3x$ 2) $y = 3 \cos x$
 3) $y = 3 \sin x$ 4) $y = \cos 3x$

53) _____

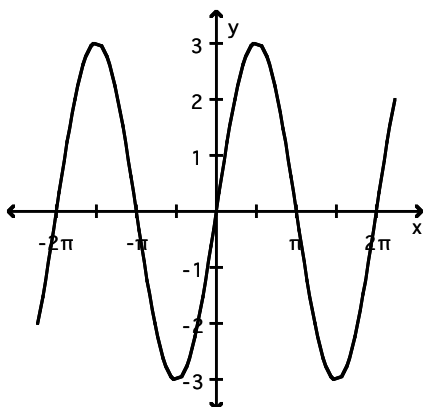
A



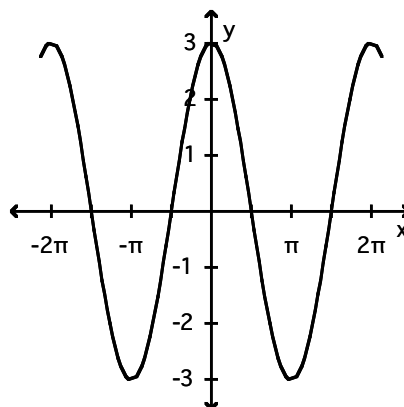
B



C



D



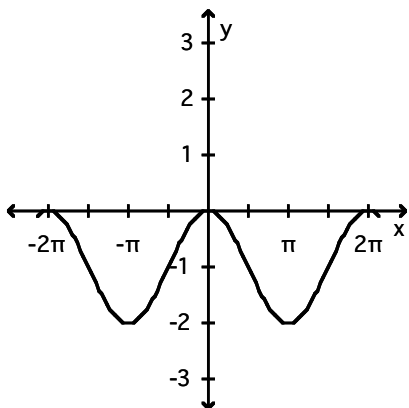
- A) 1A, 2C, 3D, 4B
 C) 1B, 2D, 3C, 4A

- B) 1A, 2D, 3C, 4B
 D) 1A, 2B, 3C, 4D

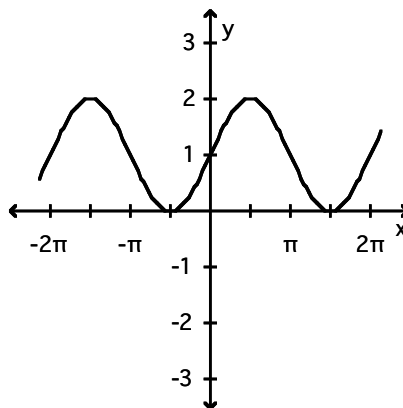
- 54) 1) $y = 1 + \sin x$ 2) $y = 1 + \cos x$
 3) $y = -1 + \sin x$ 4) $y = -1 + \cos x$

54) _____

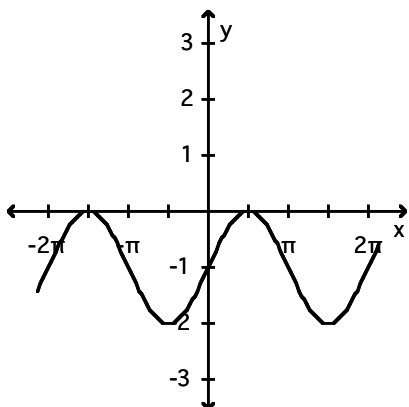
A



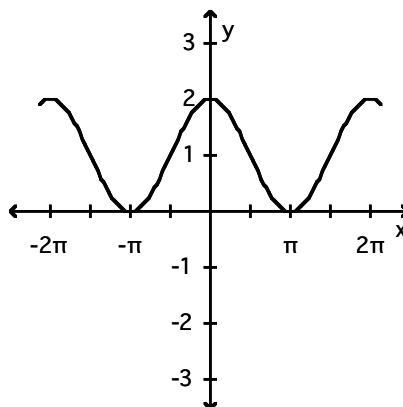
B



C



D



- A) 1A, 2B, 3C, 4D
 C) 1B, 2D, 3C, 4A

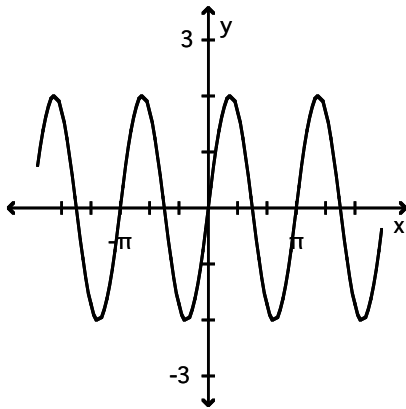
- B) 1A, 2C, 3D, 4B
 D) 1A, 2D, 3C, 4B

55) 1) $y = 2 \sin(2x)$ 2) $y = 2 \sin\left(\frac{1}{2}x\right)$

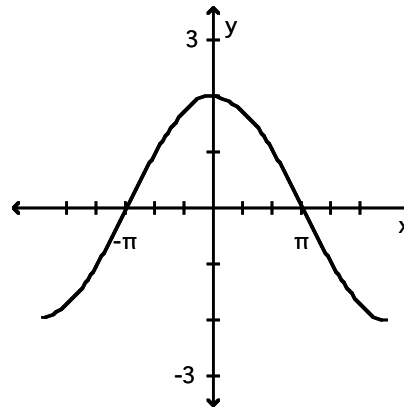
55) _____

3) $y = 2 \cos(2x)$ 4) $y = 2 \cos\left(\frac{1}{2}x\right)$

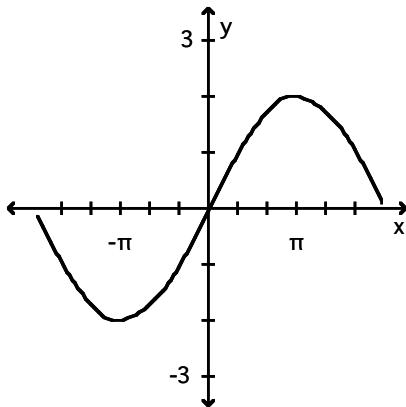
A



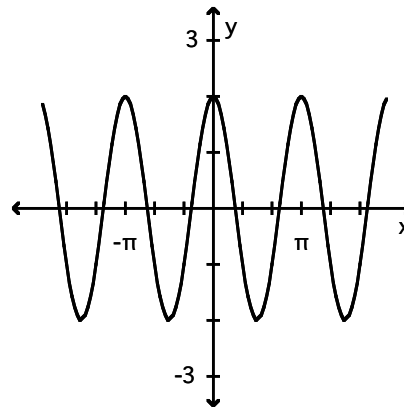
B



C



D



- A) 1C, 2A, 3D, 4B
- C) 1A, 2C, 3D, 4B

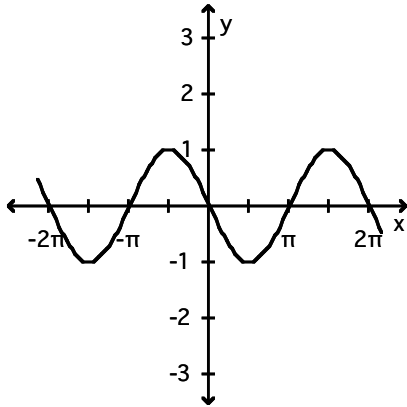
- B) 1D, 2B, 3A, 4C
- D) 1C, 2A, 3B, 4D

56) 1) $y = \sin(x - \frac{\pi}{2})$ 2) $y = \cos(x + \frac{\pi}{2})$

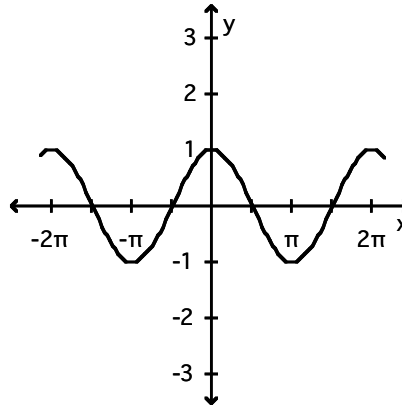
56) _____

3) $y = \sin(x + \frac{\pi}{2})$ 4) $y = \cos(x - \frac{\pi}{2})$

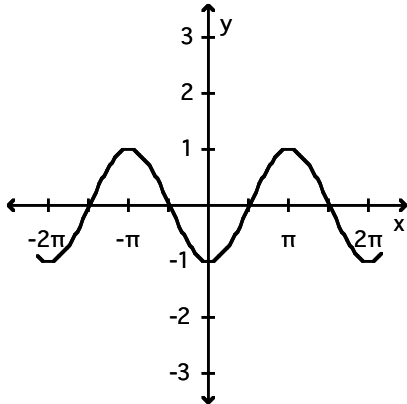
A



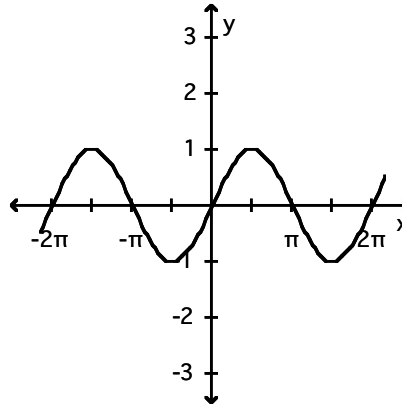
B



C



D



A) 1B, 2D, 3C, 4A

B) 1A, 2B, 3C, 4D

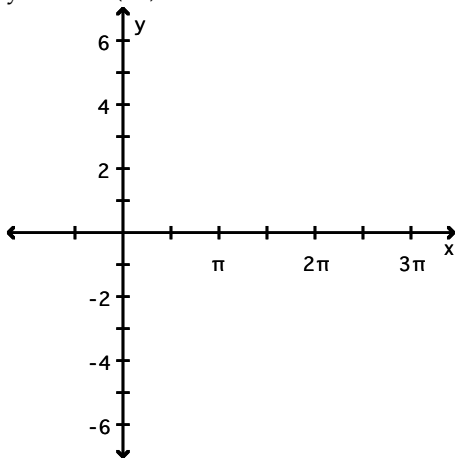
C) 1A, 2D, 3C, 4B

D) 1C, 2A, 3B, 4D

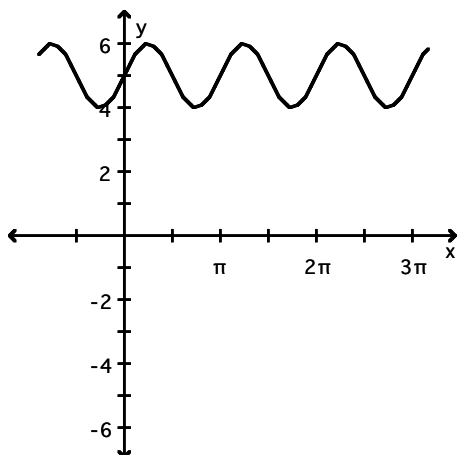
Graph the sinusoidal function.

57) $y = 5 \sin(2x)$

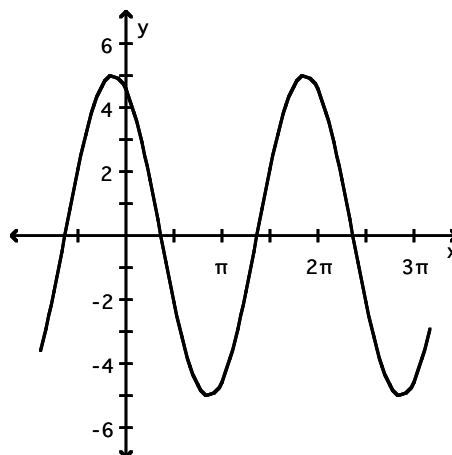
57) _____



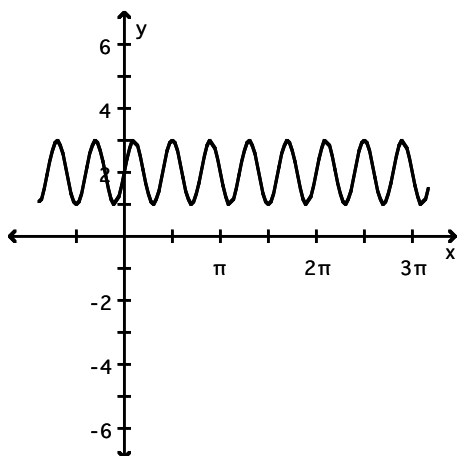
A)



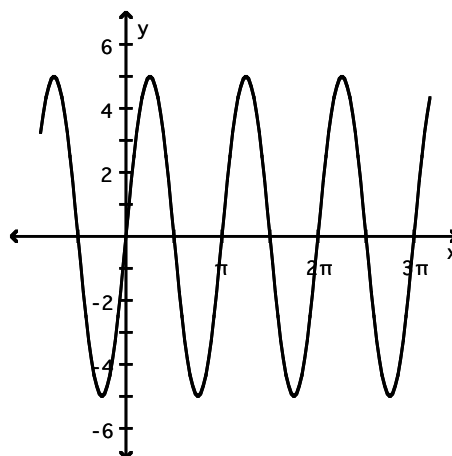
B)



C)

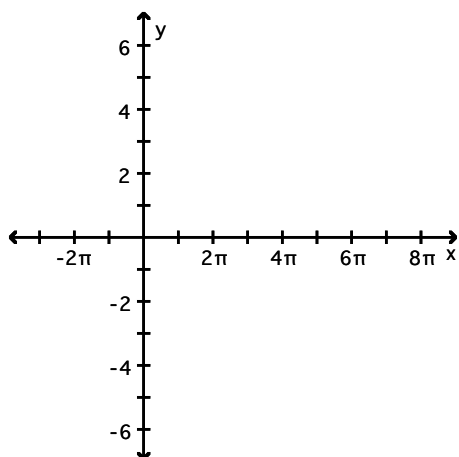


D)

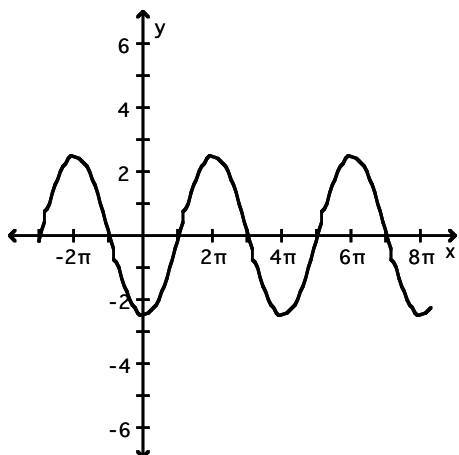


58) $y = \frac{5}{2} \cos\left(-\frac{1}{2}x\right)$

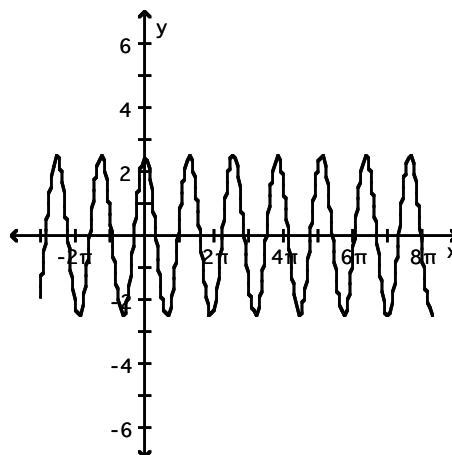
58) _____



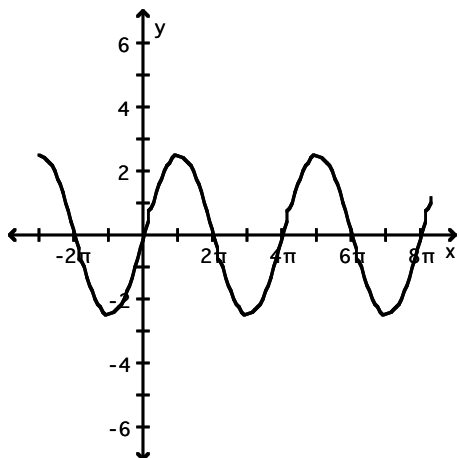
A)



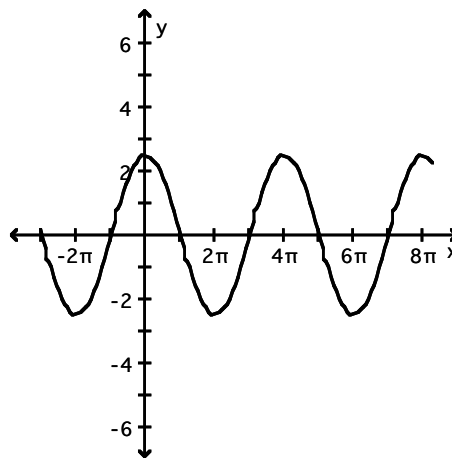
B)



C)

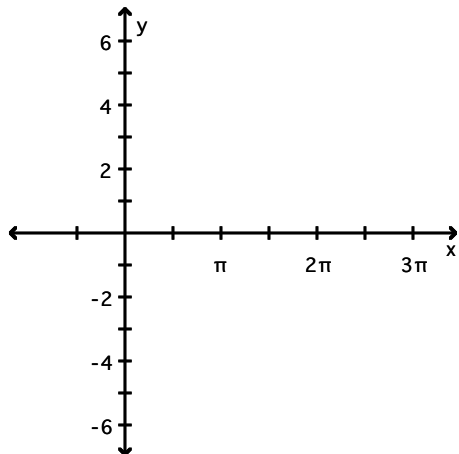


D)

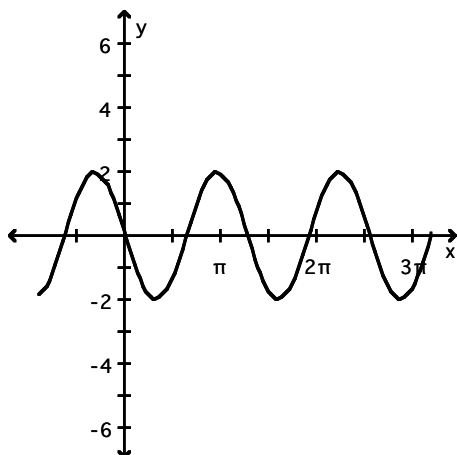


59) $y = -2 \sin\left(\frac{1}{2}x\right)$

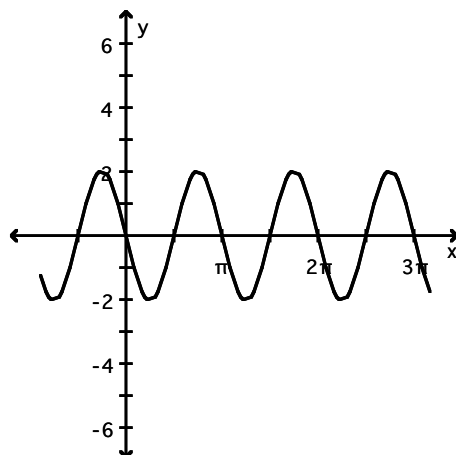
59) _____



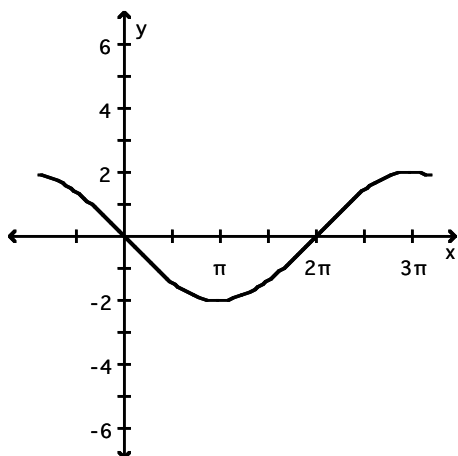
A)



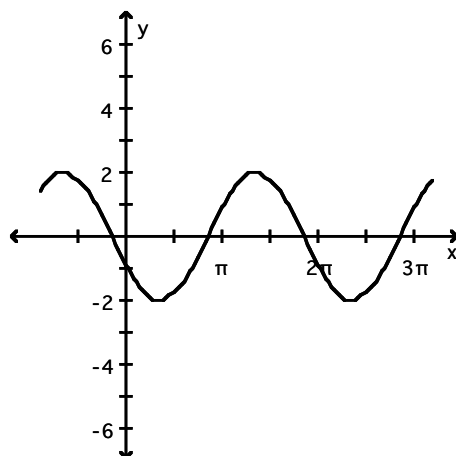
B)



C)



D)

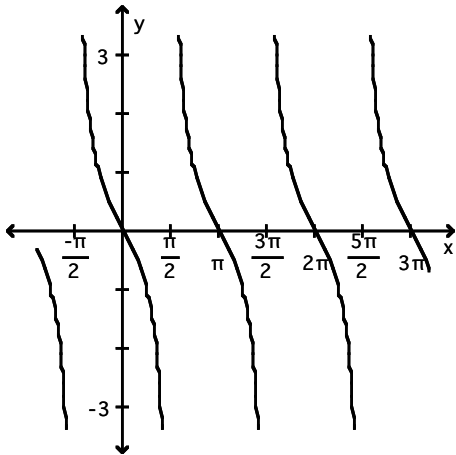


Match the function to its graph.

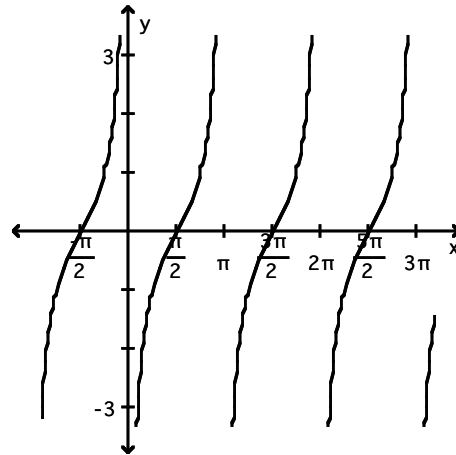
60) $y = -\tan x$

60) _____

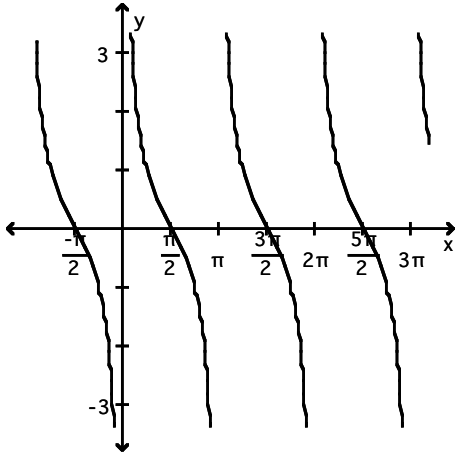
A)



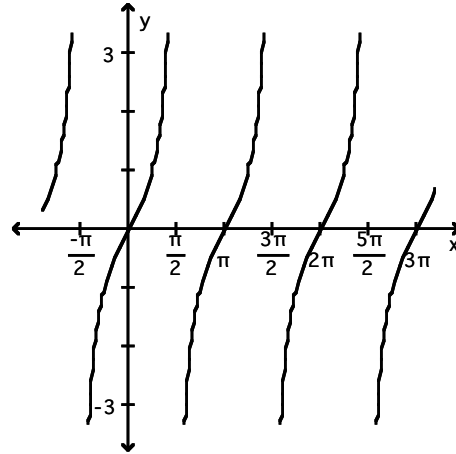
B)



C)



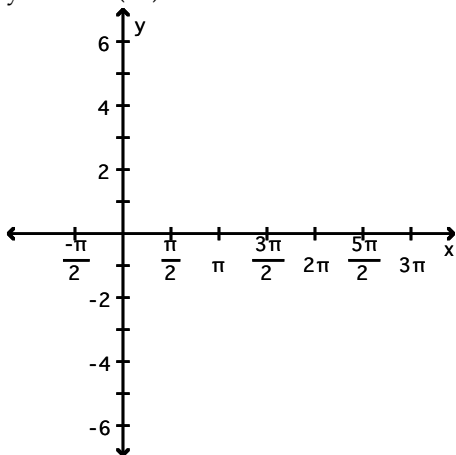
D)



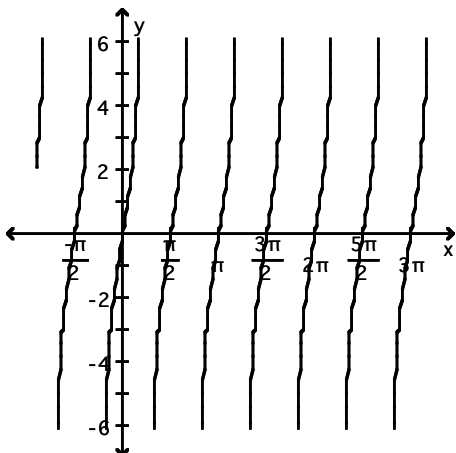
Graph the function.

61) $y = 3 \tan(2x)$

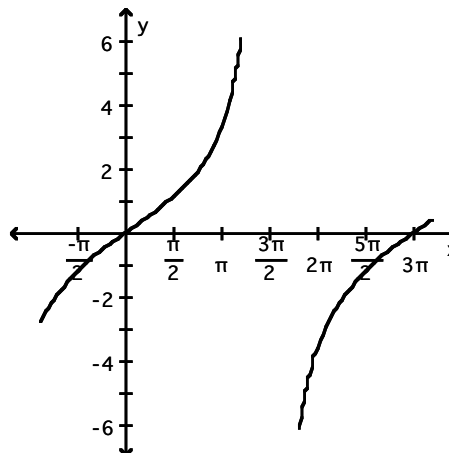
61) _____



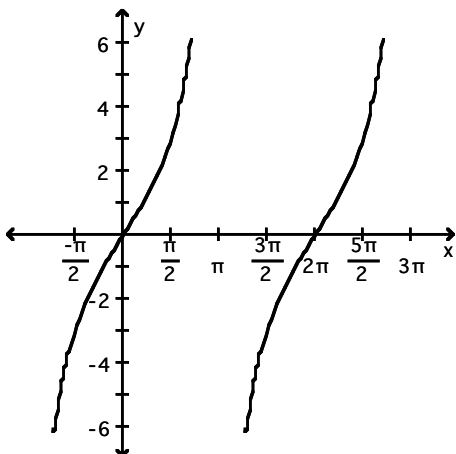
A)



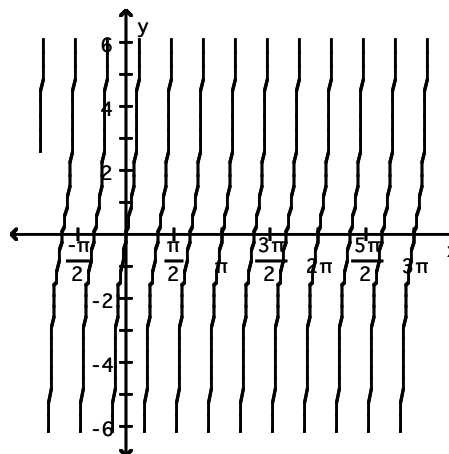
B)



C)



D)



Find the exact value of the expression.

62) $\sin^{-1} \frac{\sqrt{3}}{2}$

62) _____

A) $\frac{\pi}{4}$

B) $\frac{\pi}{3}$

C) $\frac{2\pi}{3}$

D) $\frac{3\pi}{4}$

63) $\cos^{-1} \frac{\sqrt{2}}{2}$

63) _____

A) $\frac{11\pi}{6}$

B) $\frac{\pi}{4}$

C) $\frac{\pi}{6}$

D) $\frac{7\pi}{4}$

64) $\sin^{-1} (0.5)$

64) _____

A) $\frac{7\pi}{6}$

B) $\frac{\pi}{3}$

C) $\frac{\pi}{6}$

D) $\frac{7\pi}{3}$

65) $\tan^{-1} (-1)$

65) _____

A) $\frac{\pi}{4}$

B) $\frac{5\pi}{4}$

C) $-\frac{\pi}{4}$

D) $\frac{7\pi}{4}$

Use a calculator to find the value of the expression rounded to two decimal places.

66) $\cos^{-1}(-0.3)$ A) -0.30 B) -17.46 C) 1.88 D) 107.46 66) _____

67) $\tan^{-1}(2.2)$ A) 24.44 B) 1.14 C) 65.56 D) 0.43 67) _____

68) $\sin^{-1}\left(-\frac{2}{7}\right)$ A) -16.60 B) 1.86 C) 106.60 D) -0.29 68) _____

69) $\cos^{-1}\left(-\frac{\sqrt{3}}{5}\right)$ A) -20.27 B) 110.27 C) 1.92 D) -0.35 69) _____

Find the exact value of the expression, if possible. Do not use a calculator.

70) $\cos^{-1}\left[\cos\left(-\frac{\pi}{3}\right)\right]$ A) $\frac{2\pi}{3}$ B) $\frac{4\pi}{3}$ C) $-\frac{\pi}{3}$ D) $\frac{\pi}{3}$ 70) _____

Use a sketch to find the exact value of the expression.

71) $\cos\left(\sin^{-1}\frac{4}{5}\right)$ A) $-\frac{3}{5}$ B) $-\frac{4}{5}$ C) $\frac{1}{5}$ D) $\frac{3}{5}$ 71) _____

72) $\tan\left(\sin^{-1}\frac{\sqrt{2}}{2}\right)$ A) 1 B) 2 C) $\frac{\sqrt{2}}{2}$ D) $\sqrt{2}$ 72) _____

73) $\cos\left(\sin^{-1}\frac{3}{5}\right)$ A) $-\frac{4}{5}$ B) $\frac{4}{5}$ C) $\frac{1}{5}$ D) $-\frac{3}{5}$ 73) _____

Find the exact value of the composition.

74) $\arccos[\sin(\pi/6)]$ A) $\frac{\pi}{3}$ B) $\frac{\sqrt{3}}{2}$ C) $\frac{1}{2}$ D) $\frac{\pi}{6}$ 74) _____

Complete the identity.

75) $\cot x \cdot \tan x = ?$ 75) _____
A) $\sin x$ B) -1 C) 0 D) 1

76) $\sec^2 x + \csc^2 x = ?$ 76) _____
A) $\sec^2 x + \csc^2 x$ B) $\csc^2 x - \sec^2 x$
C) $\sec^2 x - \csc^2 x$ D) $\sec x + \csc x$

77) $\sin^2 x + \sin^2 x \cot^2 x = ?$ 77) _____
A) 1 B) $\cot^2 x + 1$ C) $\cot^2 x - 1$ D) $\sin^2 x + 1$

78) $\sin^2 x + \tan^2 x + \cos^2 x = ?$ 78) _____
A) $\tan^2 x$ B) $\cot^3 x$ C) $\sin x$ D) $\sec^2 x$

79) $\frac{\csc x \cot x}{\sec x} = ?$ 79) _____
A) $\cot^2 x$ B) $\sec^2 x$ C) $\csc^2 x$ D) 1

80) $\frac{1 - \cos x}{\sin x} = ?$ 80) _____
A) $\csc x + \cot x$ B) $\csc x - \cot x$
C) $-\csc x - \cot x$ D) $\csc x - \cot x + 1$

81) The expression $\frac{1 + \tan^2 x}{\tan^2 x}$ is to be the left hand side of an equation that is an identity. Which one 81) _____
of the following four expressions can be used as the right hand side of the equation to complete the identity?
A) $\tan^2 x$ B) $-\cos^2 x$ C) $\sec^2 x$ D) $\csc^2 x$

Complete the sentence so the result is an identity. Let x be any real number.

82) $\frac{\sin x}{\tan x} = \underline{\hspace{1cm}}$ 82) _____
A) $\cos x$ B) $\cot x$ C) $\sec x$ D) $\csc x$

Which answer choice is equivalent to the given expression?

83) $\cos x \tan x \csc x$ 83) _____
A) 1 B) $\cot x$ C) $\sin x$ D) 2

84) $\sec v - \tan v \sin v$ 84) _____
A) $\cot v$ B) $1 - \csc v$ C) $\cos v$ D) $\csc v$

Find the exact value of the expression.

85) $\cos(60^\circ + 45^\circ)$

A) $\frac{\sqrt{2} + 2\sqrt{3}}{4}$

B) $\frac{\sqrt{6} - \sqrt{2}}{4}$

C) $\frac{2\sqrt{2} + \sqrt{6}}{4}$

D) $\frac{\sqrt{2} - \sqrt{6}}{4}$

85) _____

86) $\cos(45^\circ - 30^\circ)$

A) $\frac{\sqrt{6} - \sqrt{2}}{2}$

B) $\frac{\sqrt{2} + \sqrt{6}}{4}$

C) $\frac{\sqrt{2} + \sqrt{6}}{2}$

D) $\frac{\sqrt{6} - \sqrt{2}}{4}$

86) _____

87) $\cos\left(\frac{\pi}{3} + \frac{\pi}{4}\right)$

A) $\frac{2\sqrt{2} + \sqrt{6}}{4}$

B) $\frac{\sqrt{6} - \sqrt{2}}{4}$

C) $\frac{\sqrt{2} - \sqrt{6}}{4}$

D) $\frac{\sqrt{2} + 2\sqrt{3}}{4}$

87) _____

88) $\sin 75^\circ$

A) $\frac{2\sqrt{2} + \sqrt{6}}{4}$

B) $\frac{\sqrt{6} - \sqrt{2}}{4}$

C) $\frac{\sqrt{2} + 2\sqrt{3}}{4}$

D) $\frac{\sqrt{2} + \sqrt{6}}{4}$

88) _____

Find the exact value under the given conditions.

89) $\sin \alpha = -\frac{3}{5}$, $\frac{3\pi}{2} < \alpha < 2\pi$; $\tan \beta = -\frac{24}{7}$, $\frac{\pi}{2} < \beta < \pi$ Find $\cos(\alpha + \beta)$.

A) $\frac{44}{125}$

B) $\frac{117}{125}$

C) $-\frac{3}{5}$

D) $-\frac{4}{5}$

89) _____

Use the given information to find the exact value.

90) $\cos A = \frac{1}{3}$, $0 < A < \frac{\pi}{2}$; $\sin B = -\frac{1}{2}$, $\frac{3\pi}{2} < B < 2\pi$ Find $\cos(A + B)$.

A) $\frac{\sqrt{3} + 2\sqrt{2}}{6}$

B) $\frac{\sqrt{3} - 2\sqrt{2}}{6}$

C) $\frac{2\sqrt{6} + 1}{6}$

D) $\frac{2\sqrt{6} - 1}{6}$

90) _____

Find the exact value under the given conditions.

91) $\tan \alpha = \frac{21}{20}$, $\pi < \alpha < \frac{3\pi}{2}$; $\cos \beta = -\frac{24}{25}$, $\frac{\pi}{2} < \beta < \pi$ Find $\sin(\alpha + \beta)$.

A) $\frac{627}{725}$

B) $\frac{644}{725}$

C) $\frac{364}{725}$

D) $\frac{333}{725}$

91) _____

92) $\sin \alpha = -\frac{5}{13}$, $\frac{3\pi}{2} < \alpha < 2\pi$; $\tan \beta = -\frac{24}{7}$, $\frac{\pi}{2} < \beta < \pi$ Find $\cos(\alpha + \beta)$.

A) $\frac{36}{325}$

B) $-\frac{253}{325}$

C) $-\frac{204}{325}$

D) $\frac{323}{325}$

92) _____

Use the given information to find the exact value.

93) $\cos A = \frac{1}{3}$, $0 < A < \frac{\pi}{2}$; $\sin B = -\frac{1}{2}$, $\frac{3\pi}{2} < B < 2\pi$ Find $\sin(A - B)$. 93) _____

A) $\frac{\sqrt{3} - 2\sqrt{2}}{6}$ B) $\frac{\sqrt{3} + 2\sqrt{2}}{6}$ C) $\frac{2\sqrt{6} + 1}{6}$ D) $\frac{2\sqrt{6} - 1}{6}$

Use the appropriate sum or difference identity to write the given expression as a function of x alone.

94) $\tan(x - \pi)$ 94) _____

A) $\frac{1 + \sqrt{3} \tan x}{\sqrt{3} - \tan x}$ B) $\tan x$ C) $\frac{\tan x - \sqrt{3}}{1 + \sqrt{3} \tan x}$ D) $-\tan x$

95) $\sin(x - \pi)$ 95) _____

A) $\cos x$ B) $\sin x$ C) $-\cos x$ D) $-\sin x$

96) $\sin\left(\frac{\pi}{2} - x\right)$ 96) _____

A) $\sin x$ B) $-\sin x$ C) $-\cos x$ D) $\cos x$

Use the information given about the angle θ , to find the exact value of the indicated trigonometric function.

97) $\cos \theta = -\frac{5}{13}$, θ in quadrant II Find $\sin 2\theta$. 97) _____

A) $-\frac{120}{169}$ B) $\frac{120}{169}$ C) $\frac{119}{169}$ D) $-\frac{119}{169}$

98) $\sin \theta = -\frac{4}{5}$, θ in quadrant IV Find $\sin 2\theta$. 98) _____

A) $\frac{7}{25}$ B) $\frac{24}{25}$ C) $-\frac{24}{25}$ D) $-\frac{7}{25}$

99) $\sin \theta = -\frac{4}{5}$, θ in quadrant IV Find $\cos 2\theta$. 99) _____

A) $\frac{24}{25}$ B) $\frac{7}{25}$ C) $-\frac{7}{25}$ D) $-\frac{24}{25}$

Answer the question.

100) Find $\cos \theta$ given that $\cos 2\theta = \frac{5}{7}$ and $0 \leq \theta < \frac{\pi}{2}$. 100) _____

A) $\frac{\sqrt{42}}{5}$ B) $\frac{\sqrt{42}}{7}$ C) $\frac{7}{42}$ D) 7

Find the exact value by using a half-angle identity.

101) $\sin 22.5^\circ$ 101) _____

A) $\frac{1}{2}\sqrt{2 - \sqrt{2}}$ B) $-\frac{1}{2}\sqrt{2 + \sqrt{2}}$ C) $\frac{1}{2}\sqrt{2 + \sqrt{2}}$ D) $-\frac{1}{2}\sqrt{2 - \sqrt{2}}$

102) $\cos 22.5^\circ$

A) $-\frac{1}{2}\sqrt{2-\sqrt{2}}$

B) $\frac{1}{2}\sqrt{2+\sqrt{2}}$

C) $-\frac{1}{2}\sqrt{2+\sqrt{2}}$

D) $\frac{1}{2}\sqrt{2-\sqrt{2}}$

102) _____

Answer the question.

103) Find $\cos \theta$ given that $\sin\left(\frac{\theta}{2}\right) = \frac{2}{5}$ and $0 \leq \theta < \frac{\pi}{2}$.

103) _____

A) $\frac{2}{25}$

B) $\frac{17}{25}$

C) $\frac{3}{25}$

D) $\frac{17}{3}$

Use the information given about the angle θ , $0 \leq \theta \leq 2\pi$, to find the exact value of the indicated trigonometric function.

104) $\csc \theta = \frac{13}{12}$, $\frac{\pi}{2} < \theta < \pi$

Find $\cos(2\theta)$.

104) _____

A) $-\frac{120}{169}$

B) $\frac{119}{169}$

C) $-\frac{119}{169}$

D) $\frac{120}{169}$

Answer Key

Testname: REVIEW FOR EXAM 3

- 1) A
- 2) A
- 3) C
- 4) B
- 5) A
- 6) D
- 7) C
- 8) B
- 9) A
- 10) C
- 11) C
- 12) C
- 13) B
- 14) A
- 15) B
- 16) D
- 17) A
- 18) D
- 19) A
- 20) A
- 21) C
- 22) C
- 23) C
- 24) A
- 25) B
- 26) A
- 27) B
- 28) C
- 29) C
- 30) A
- 31) C
- 32) B
- 33) D
- 34) B
- 35) C
- 36) C
- 37) B
- 38) D
- 39) A
- 40) B
- 41) B
- 42) D
- 43) D
- 44) C
- 45) B
- 46) D
- 47) A
- 48) C
- 49) C

Answer Key

Testname: REVIEW FOR EXAM 3

- 50) C
- 51) A
- 52) A
- 53) C
- 54) C
- 55) C
- 56) D
- 57) D
- 58) D
- 59) C
- 60) A
- 61) A
- 62) B
- 63) B
- 64) C
- 65) C
- 66) C
- 67) B
- 68) D
- 69) C
- 70) D
- 71) D
- 72) A
- 73) B
- 74) A
- 75) D
- 76) A
- 77) A
- 78) D
- 79) A
- 80) B
- 81) D
- 82) A
- 83) A
- 84) C
- 85) D
- 86) B
- 87) C
- 88) D
- 89) A
- 90) A
- 91) C
- 92) A
- 93) C
- 94) B
- 95) D
- 96) D
- 97) A
- 98) C

Answer Key

Testname: REVIEW FOR EXAM 3

- 99) C
- 100) B
- 101) A
- 102) B
- 103) B
- 104) C