

Exam

Name _____

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

Solve for the angle θ , where $0 \leq \theta \leq 2\pi$

1) $\sin 2\theta + \cos \theta = 0$

A) $\theta = \frac{\pi}{2}, \frac{3\pi}{2}, \frac{7\pi}{6}, \frac{11\pi}{6}$

B) $\theta = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}$

C) $\frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{6}, \frac{11\pi}{6}$

D) $\theta = \frac{\pi}{2}, \frac{3\pi}{2}, \frac{\pi}{6}, \frac{5\pi}{6}$

1) _____

Answer: A

Diff: 0 Type: BI

Evaluate the requested trigonometric function using the information given.

2) $\sec \theta = \frac{\sqrt{26}}{5}$; $3\pi/2 < \theta < 2\pi$

2) _____

Find $\cot \theta$.

A) -5

B) $-\sqrt{26}$

C) $-\frac{1}{5}$

D) 5

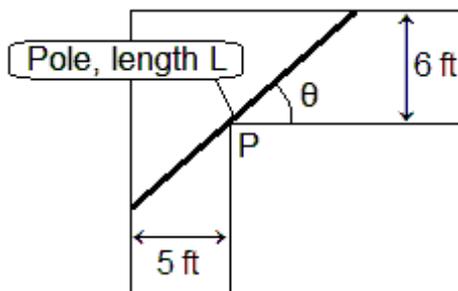
Answer: A

Diff: 0 Type: BI

Solve the problem.

- 3) A pole of length L is carried horizontally around a corner where a 5-ft-wide hallway meets a 6-ft-wide hallway. For $0 < \theta < \frac{\pi}{2}$, find the relationship between L and θ at the moment when the pole simultaneously touches both walls and the corner P . Estimate θ when $L = 18$ ft. Round the result to three decimal places.

3) _____



A) $L = 6 \sec \theta + 5 \csc \theta$;
 $\theta \approx 0.458, 1.060$

B) $L = 5 \cot \theta + 6 \tan \theta$;
 $\theta \approx 0.300, 1.215$

C) $L = 5 \sec \theta + 6 \csc \theta$;
 $\theta \approx 0.511, 1.113$

D) $L = \sec \theta + 11 \csc \theta$;
 $\theta \approx 0.721, 1.425$

Answer: C

Diff: 0 Type: MC

4) If $f(x) = \sqrt{x}$, $g(x) = \frac{x}{4}$, and $h(x) = 4x + 8$, find $f(g(h(x)))$. 4) _____

- A) $\sqrt{x+8}$ B) $\sqrt{x+2}$ C) $4\sqrt{x+8}$ D) $\sqrt{x+2}$

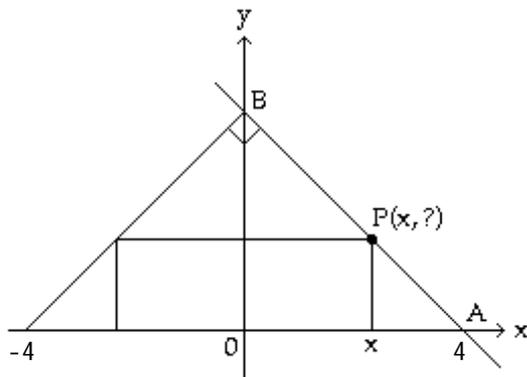
Answer: B
Diff: 0 Type: BI

5) A marine biologist determines that the size, p , of a population of crabs, after t days can be modeled by the function $p(t) = -0.00015t^3 + 0.04t^2 + 17.5t + 3,000$. Assuming that this model continues to be accurate, when will this population become extinct? (Round to the nearest day.) 5) _____

- A) 707 days B) 911 days C) 1512 days D) 547 days

Answer: D
Diff: 0 Type: BI

6) The figure shown here shows a rectangle inscribed in an isosceles right triangle whose hypotenuse is 8 units long. Express the area A of the rectangle in terms of x . 6) _____



- A) $A(x) = x(4 - x)$ B) $A(x) = 2x^2$ C) $A(x) = 2x(4 - x)$ D) $A(x) = 2x(x - 4)$

Answer: C
Diff: 0 Type: BI

7) Let $g(x) = \sqrt{x}$. Find a function $y = f(x)$ so that $(f \circ g)(x) = |x|$. 7) _____

- A) $f(x) = x$ B) $f(x) = x^2$ C) $f(x) = \frac{1}{x}$ D) $f(x) = \frac{1}{x^2}$

Answer: B
Diff: 0 Type: BI

Simplify the difference quotients $\frac{f(x+h) - f(x)}{h}$ and $\frac{f(x) - f(a)}{x - a}$ for the following function. Rationalize the numerator when necessary.

8) $f(x) = \sqrt{2 - 5x}$

8) _____

A) $-\frac{1}{\sqrt{2 - 5x - 5h} - \sqrt{2 - 5x}}; -\frac{1}{\sqrt{2 - 5x} - \sqrt{2 - 5a}}$

B) $\frac{1}{\sqrt{5x + 5h + 2} - \sqrt{5x + 2}}; \frac{1}{\sqrt{5x + 2} - \sqrt{5a + 2}}$

C) $\frac{5}{\sqrt{2 - 5x - 5h} + \sqrt{2 - 5x}}; \frac{5}{\sqrt{5x - 2} + \sqrt{5a - 2}}$

D) $-\frac{5}{\sqrt{2 - 5x - 5h} + \sqrt{2 - 5x}}; -\frac{5}{\sqrt{2 - 5x} + \sqrt{2 - 5a}}$

Answer: D

Diff: 0 Type: BI

Design a sine function with the given properties.

9) It has a period of 24 hr with a maximum value of 20 at $t = 6$ hr and a minimum value of 2 at $t = 18$ hr.

9) _____

A) $9 \sin\left(\frac{\pi X}{12}\right) + 11$

B) $9 \sin\left(\frac{\pi X}{24}\right) + 11$

C) $18 \sin\left(\frac{\pi X}{12} - \frac{5\pi}{4}\right) + 11$

D) $9 \sin\left(\frac{\pi X}{12}\right) + 9$

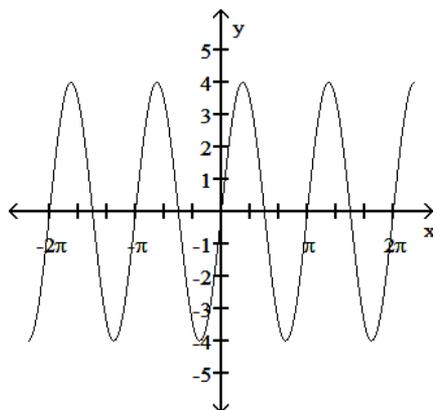
Answer: A

Diff: 0 Type: BI

Find an equation for the graph.

10)

10) _____



A) $y = 4 \sin\left(\frac{1}{2}x\right)$

B) $y = 2 \sin\left(\frac{1}{4}x\right)$

C) $y = 4 \sin(2x)$

D) $y = 2 \sin(4x)$

Answer: C

Diff: 0 Type: BI

Solve the problem.

11) If $f(x) = \sqrt{x+4}$ and $g(x) = 8x - 8$, find $f(g(x))$.

A) $8\sqrt{x+4} - 8$

B) $8\sqrt{x-4}$

C) $2\sqrt{2x+1}$

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

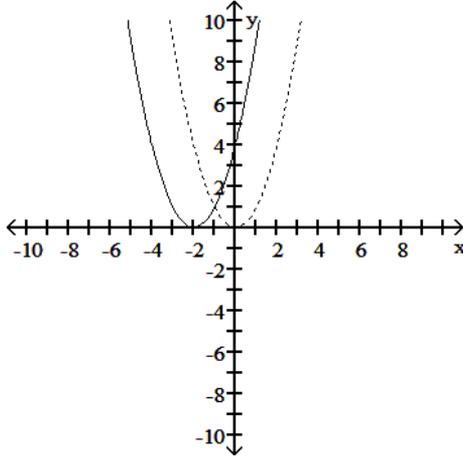
11) _____

Answer: D

Diff: 0 Type: BI

12) The accompanying figure shows the graph of $y = x^2$ shifted to a new position. Write the equation for the new graph.

12) _____



A) $y = (x - 2)^2$

B) $y = x^2 - 2$

C) $y = (x + 2)^2$

D) $y = x^2 + 2$

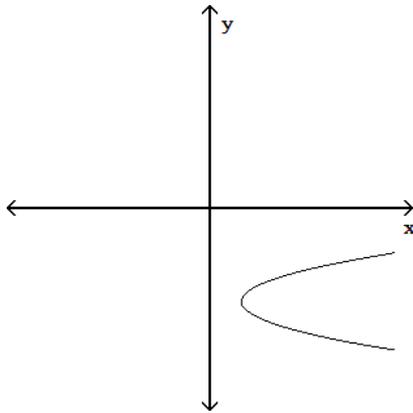
Answer: C

Diff: 0 Type: BI

Determine whether or not the graph is a graph of a function of x .

13)

13) _____



A) Function

B) Not a function

Answer: B

Diff: 0 Type: BI

Evaluate the requested trigonometric function using the information given.

14) $\sin \theta = \frac{4}{9}$; $\pi/2 < \theta < \pi$

14) _____

Find $\sec \theta$.

A) $-\frac{4\sqrt{65}}{65}$

B) $-\frac{\sqrt{65}}{9}$

C) $-\frac{9\sqrt{65}}{65}$

D) $\frac{\sqrt{65}}{4}$

Answer: C

Diff: 0 Type: BI

Find the domain and range of the function.

15) $g(z) = -1 - \sqrt{z}$

15) _____

A) D: $(-\infty, 0]$, R: $[-1, \infty)$

B) D: $(-\infty, -1]$, R: $(-\infty, \infty)$

C) D: $(-\infty, \infty)$, R: $(-\infty, -1]$

D) D: $[0, \infty)$, R: $(-\infty, -1]$

Answer: D

Diff: 0 Type: BI

Without graphing the function, determine its amplitude or period as requested.

16) $y = \cos 5x$ Find the period.

16) _____

A) 1

B) $\frac{2\pi}{5}$

C) 5

D) 2π

Answer: B

Diff: 0 Type: BI

Design a sine function with the given properties.

17) It has a period of 24 hr with a minimum value of -3 at $t = 3$ hr and a maximum value of 9 at $t = 15$ hr.

17) _____

A) $6 \sin\left(\frac{\pi x}{24} - \frac{3\pi}{4}\right) - 3$

B) $12 \sin\left(\frac{\pi x}{12} - \frac{3\pi}{4}\right) + 3$

C) $12 \sin\left(\frac{\pi x}{12} + \frac{3\pi}{4}\right) - 3$

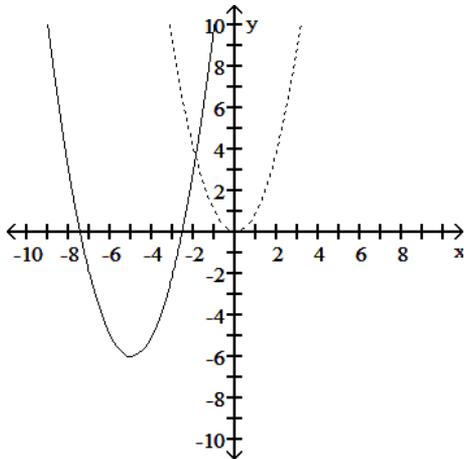
D) $6 \sin\left(\frac{\pi x}{12} - \frac{3\pi}{4}\right) + 3$

Answer: D

Diff: 0 Type: BI

Solve the problem.

- 18) The accompanying figure shows the graph of $y = x^2$ shifted to a new position. Write the equation for the new graph. 18) _____



- A) $y = (x + 5)^2 - 6$ B) $y = (x + 6)^2 + 5$ C) $y = (x - 5)^2 - 6$ D) $y = (x + 5)^2 + 6$

Answer: A

Diff: 0 Type: BI

- 19) If $f(x) = \frac{1}{x}$ and $g(x) = 3x^5$, find $g(f(x))$. 19) _____

- A) $\frac{1}{3x^5}$ B) $\frac{3}{x}$ C) $\frac{3}{x^5}$ D) $\frac{1}{x^5}$

Answer: C

Diff: 0 Type: BI

Simplify the difference quotients $\frac{f(x+h) - f(x)}{h}$ and $\frac{f(x) - f(a)}{x - a}$ for the following function. Rationalize the numerator when necessary.

- 20) $f(x) = 5x^2 + 6x + 1$ 20) _____

- A) $10x^2 + h$; $25x + 25a + 6$ B) $10x + 5h + 6$; $5x + 5a + 6$
 C) $10x + 10h + 6$; $5x - 5a - 6$ D) $10x + 6h + 1$; $10x + 10a + 6$

Answer: B

Diff: 0 Type: BI

Express the given function as a composite of functions f and g such that $y = f(g(x))$.

- 21) $y = |7x + 7|$ 21) _____

- A) $f(x) = |-x|$, $g(x) = 7x - 7$ B) $f(x) = |x|$, $g(x) = 7x + 7$
 C) $f(x) = x$, $g(x) = 7x + 7$ D) $f(x) = -|x|$, $g(x) = 7x + 7$

Answer: B

Diff: 0 Type: BI

Determine an appropriate domain of the function. Identify the independent and dependent variables.

22) A weather balloon of radius r (in meters) is filled with air. The volume V of the balloon is given by the function $f(r) = \frac{4}{3}\pi r^3$. Assume the balloon can hold up to 8 m^3 of air. 22) _____

A) $D = [0, 8]$
The independent variable is r .
The dependent variable is V .

B) $D = \left[0, 3\sqrt{\frac{6}{\pi}}\right]$
The independent variable is r .
The dependent variable is V .

C) $D = \left[3\sqrt{\frac{6}{\pi}}, 8\right]$
The independent variable is r .
The dependent variable is V .

D) $D = \left[0, 3\sqrt{\frac{\pi}{6}}\right]$
The independent variable is V .
The dependent variable is r .

Answer: B
Diff: 0 Type: BI

Solve for the angle θ , where $0 \leq \theta \leq 2\pi$

23) $\cos^2\theta = \frac{1}{4}$ 23) _____

A) $\theta = \frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{5\pi}{3}$

B) $\theta = \frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4}$

C) $\theta = 0, \pi, 2\pi$

D) $\theta = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}$

Answer: A
Diff: 0 Type: BI

Describe how to transform the graph of f into the graph of g .

24) $f(x) = \sqrt{x}$ and $g(x) = 6\sqrt{x}$ 24) _____

A) Horizontal scaling by a factor of $\frac{1}{6}$

B) Horizontal scaling by a factor of 6

C) Vertically scaling by a factor of $\frac{1}{6}$

D) Vertical scaling by a factor of 6

Answer: D
Diff: 0 Type: BI

Simplify the difference quotients $\frac{f(x+h) - f(x)}{h}$ and $\frac{f(x) - f(a)}{x-a}$ for the following function. Rationalize the numerator when necessary.

25) $f(x) = \frac{x}{x+9}$ 25) _____

A) $-\frac{h+9}{(x+9)(x+h+9)}$; $-\frac{a+9}{(x+9)(a+9)}$

B) $-\frac{9}{(9-x)(9-x-h)}$; $-\frac{9}{(9-x)(9-a)}$

C) $\frac{1}{(9-x)(9-x-h)}$; $\frac{1}{(9-x)(9-a)}$

D) $\frac{9}{(x+9)(x+h+9)}$; $\frac{9}{(x+9)(a+9)}$

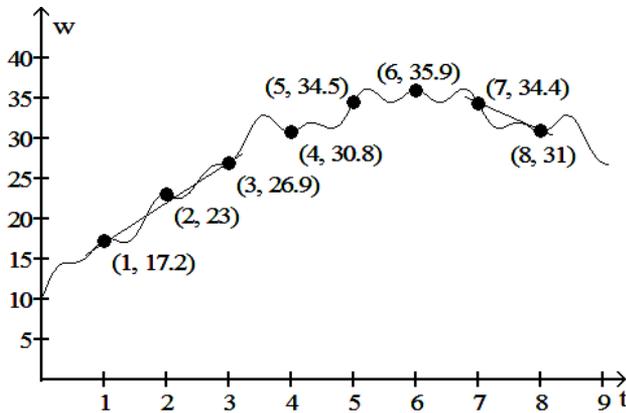
Answer: D
Diff: 0 Type: BI

Solve the problem.

26) The wind speed is tracked as a storm approaches. The maximum speed w of wind gusts, in miles per hour, t hours after midnight on the night of an approaching storm is given in the figure.

26) _____

- Find the slope of the secant line that passes through points $(1, 17.2)$ and $(3, 26.9)$. Interpret your answer as an average rate of change over the interval $1 \leq t \leq 3$.
- Repeat the procedure outlined in part (a) for the secant line that passes through points $(7, 34.4)$ and $(8, 31)$.
- Notice that the curve in the figure is generally increasing until $t = 6$, and is generally decreasing after $t = 6$. Give a plausible explanation for this behavior.



- 4.85, the wind is increasing in speed at an average rate of 4.85 mph
 - 3.4, the wind speed is decreasing in speed at an average rate of 3.4 mph
 - The storm reached its farthest point about 6:00 a.m. and is moving closer after that.
- 4.85, the wind is increasing in speed at an average rate of 4.85 mph per hour
 - 3.4, the wind speed is decreasing in speed at an average rate of 3.4 mph per hour
 - The storm reached its closest point about 6:00 a.m. and is moving away after that.
- 4.85, the wind is increasing in speed at an average rate of 4.85 mph
 - 3.4, the wind speed is decreasing in speed at an average rate of 3.4 mph
 - The storm reached its closest point about 6:00 a.m. and is moving away after that.
- 9.7, the wind is increasing in speed at an average rate of 9.7 mph per hour
 - 3.4, the wind speed is decreasing in speed at an average rate of 3.4 mph per hour
 - The storm reached its closest point about 6:00 a.m. and is moving away after that.

Answer: B

Diff: 0 Type: BI

Evaluate the requested trigonometric function using the information given.

27) $\cos \theta = \frac{1}{4}$; $3\pi/2 < \theta < 2\pi$

27) _____

Find $\tan \theta$.

A) $-\sqrt{15}$

B) $-\sqrt{17}$

C) $-\frac{\sqrt{15}}{15}$

D) 4

Answer: A

Diff: 0 Type: BI

Solve the problem.

28) Let $g(x) = x + 8$. Find a function $y = f(x)$ so that $(f \circ g)(x) = 2x + 16$

A) $f(x) = 2x + 8$

B) $f(x) = 2(x + 1)$

C) $f(x) = 2x$

D) $f(x) = 2x - 8$

28) _____

Answer: C

Diff: 0 Type: BI

Without graphing the function, determine its amplitude or period as requested.

29) $y = -2 \cos x$ Find the period.

A) 2

B) 2π

C) π

D) $\frac{\pi}{2}$

29) _____

Answer: B

Diff: 0 Type: BI

Evaluate the requested trigonometric function using the information given.

30) $\sec \theta = \frac{9\sqrt{65}}{65}$; $3\pi/2 < \theta < 2\pi$

Find $\sin \theta$.

A) $-\frac{4\sqrt{65}}{65}$

B) $-\frac{\sqrt{65}}{9}$

C) $\frac{\sqrt{65}}{4}$

D) $-\frac{4}{9}$

30) _____

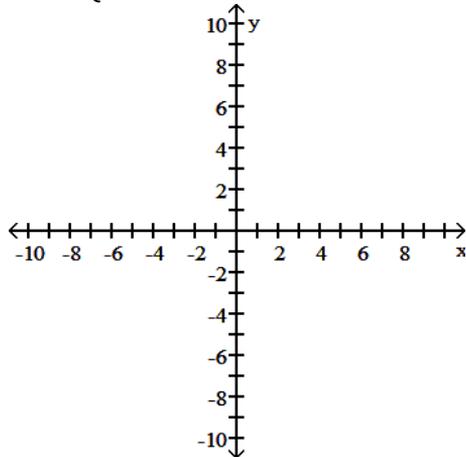
Answer: D

Diff: 0 Type: BI

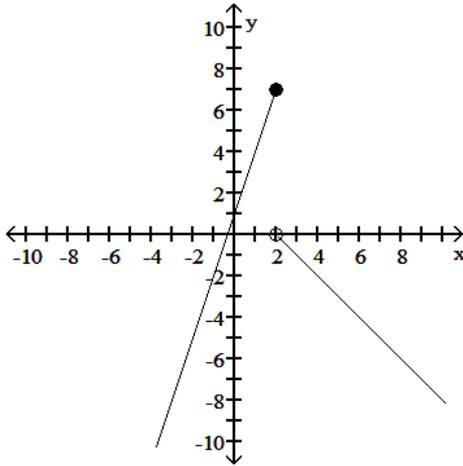
Graph the function.

31) $F(x) = \begin{cases} 2 - x, & x \leq 2 \\ 1 + 3x, & x > 2 \end{cases}$

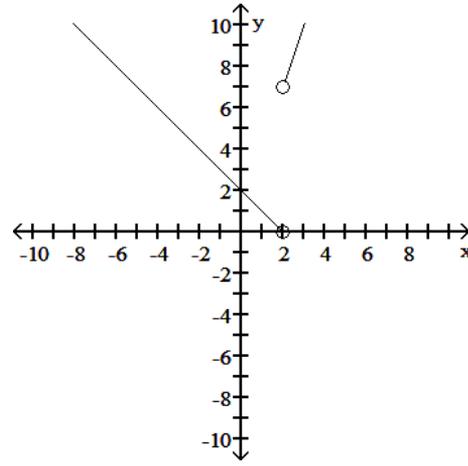
31) _____



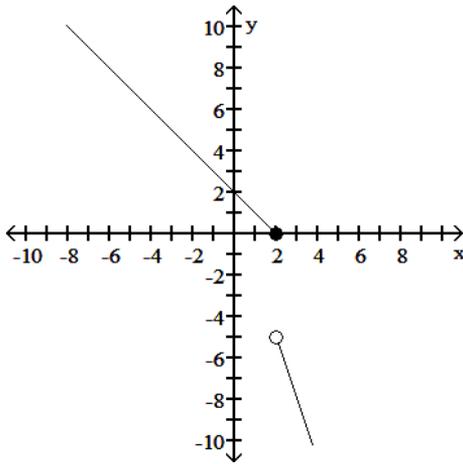
A)



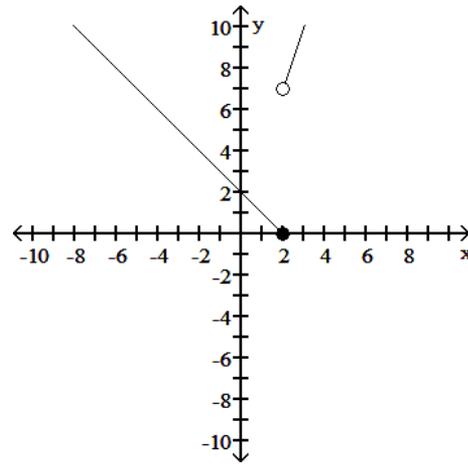
B)



C)



D)



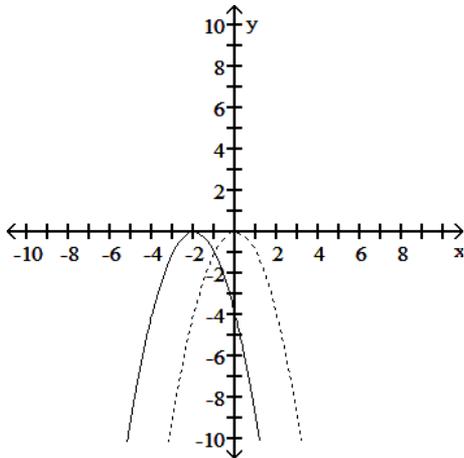
Answer: D

Diff: 0 Type: BI

Solve the problem.

32) The accompanying figure shows the graph of $y = -x^2$ shifted to a new position. Write the equation for the new graph.

32) _____



A) $y = -x^2 + 2$

B) $y = -(x + 2)^2$

C) $y = -x^2 - 2$

D) $y = -(x - 2)^2$

Answer: B

Diff: 0 Type: BI

Find the domain and range of the function.

33) $F(t) = \frac{9}{\sqrt{t}}$

33) _____

A) D: $(-\infty, 0)$, R: $(-\infty, 0)$

B) D: $[0, \infty)$, R: $(-\infty, \infty)$

C) D: $(-\infty, \infty)$, R: $(-\infty, \infty)$

D) D: $(0, \infty)$, R: $(0, \infty)$

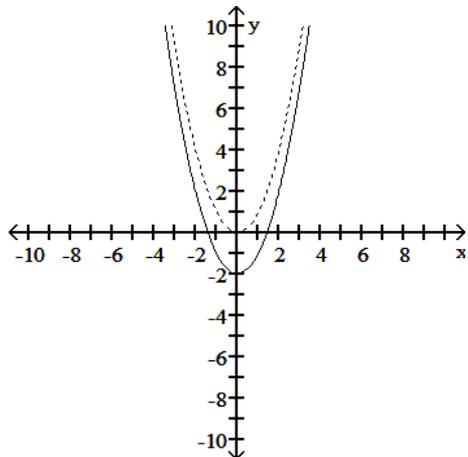
Answer: D

Diff: 0 Type: BI

Solve the problem.

34) The accompanying figure shows the graph of $y = x^2$ shifted to a new position. Write the equation for the new graph.

34) _____



A) $y = x^2 + 2$

B) $y = (x + 2)^2$

C) $y = x^2 - 2$

D) $y = (x - 2)^2$

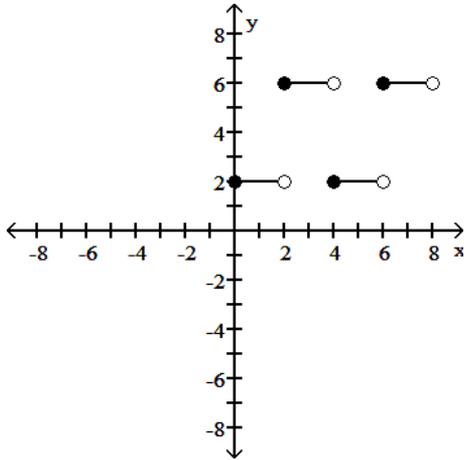
Answer: C

Diff: 0 Type: BI

Find a formula for the function graphed.

35)

35) _____



A) $f(x) = \begin{cases} 6, & 0 \leq x < 6 \\ 2, & 2 \leq x < 8 \end{cases}$

B) $f(x) = \begin{cases} 2, & 0 \leq x < 6 \\ 6, & 2 \leq x < 8 \end{cases}$

C) $f(x) = \begin{cases} 2, & 0 \leq x \leq 2 \\ 6, & 2 < x \leq 4 \\ 2, & 4 < x \leq 6 \\ 6, & 6 < x \leq 8 \end{cases}$

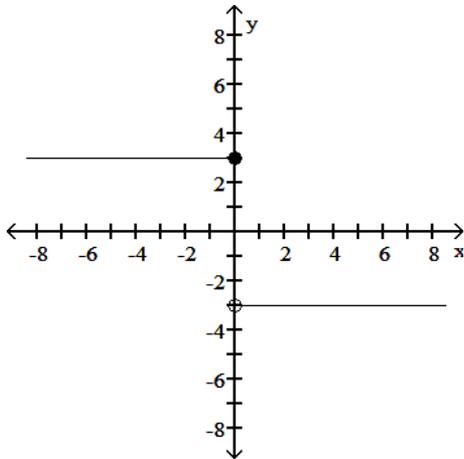
D) $f(x) = \begin{cases} 2, & 0 \leq x < 2 \\ 6, & 2 \leq x < 4 \\ 2, & 4 \leq x < 6 \\ 6, & 6 \leq x < 8 \end{cases}$

Answer: D

Diff: 0 Type: BI

36)

36) _____



A) $f(x) = \begin{cases} 3x, & x \leq 0 \\ -3x, & x > 0 \end{cases}$

B) $f(x) = \begin{cases} 3, & x < 0 \\ -3, & x \geq 0 \end{cases}$

C) $f(x) = \begin{cases} 3, & x \leq 0 \\ -3, & x > 0 \end{cases}$

D) $f(x) = \begin{cases} -3, & x \leq 0 \\ 3, & x > 0 \end{cases}$

Answer: C

Diff: 0 Type: BI

Solve for the angle θ , where $0 \leq \theta \leq 2\pi$

37) $\sin 2\theta - \cos \theta = 0$

A) $\frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{6}, \frac{11\pi}{6}$

C) $0, \frac{\pi}{2}, \pi, \frac{3\pi}{2}, 2\pi$

Answer: D

Diff: 0 Type: BI

B) $\theta = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}$

D) $\theta = \frac{\pi}{2}, \frac{3\pi}{2}, \frac{\pi}{6}, \frac{5\pi}{6}$

37) _____

Find the domain and range of the function.

38) $f(x) = 9 + \sqrt{x}$

A) D: $[0, \infty)$, R: $(-\infty, \infty)$

C) D: $(-\infty, 0]$, R: $(-\infty, 9]$

Answer: B

Diff: 0 Type: BI

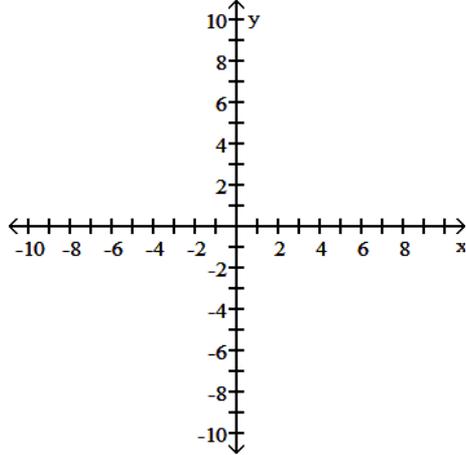
B) D: $[0, \infty)$, R: $[9, \infty)$

D) D: $(-\infty, \infty)$, R: $[9, \infty)$

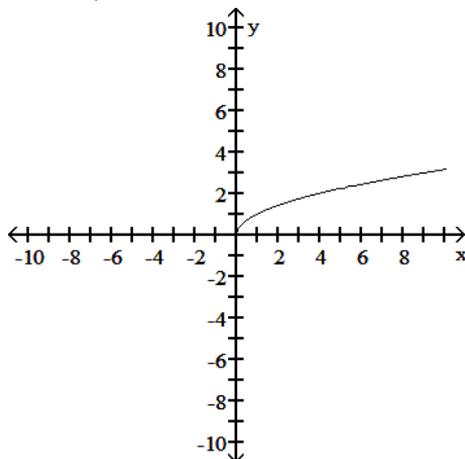
38) _____

Find the domain and graph the function.

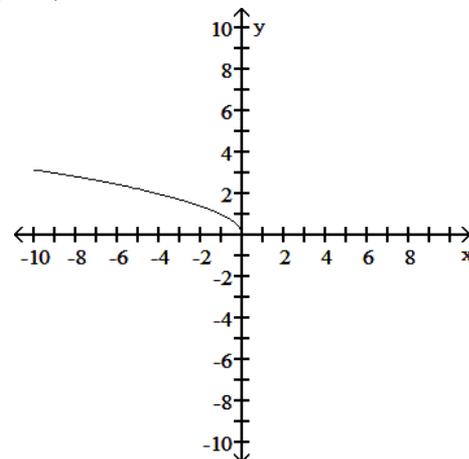
39) $F(x) = \sqrt{-x}$



A) D: $[0, \infty)$

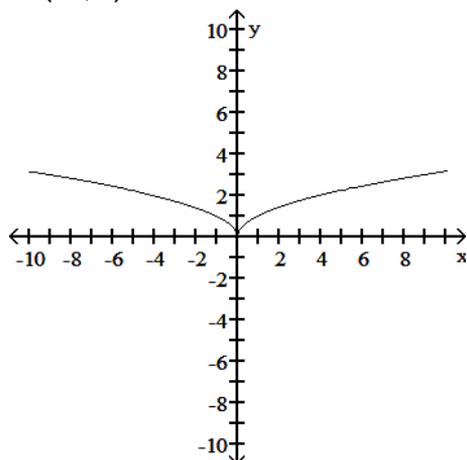


B) D: $(-\infty, 0]$

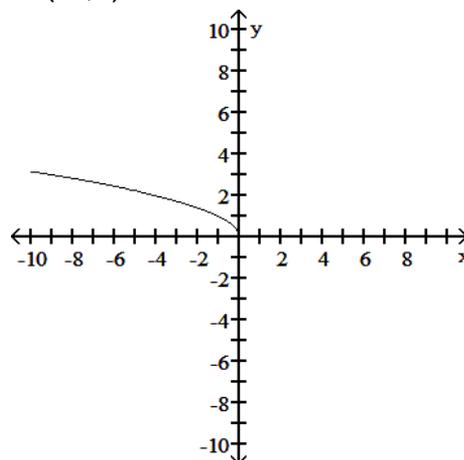


39) _____

C) D: $(-\infty, \infty)$



D) D: $(-\infty, 0)$



Answer: B
Diff: 0 Type: BI

Simplify the difference quotients $\frac{f(x+h) - f(x)}{h}$ and $\frac{f(x) - f(a)}{x - a}$ for the following function. Rationalize the numerator when necessary.

40) $f(x) = 3x - 5$

A) $3x - 3h; 3x - 3a$

B) $3; 3x - 3a$

C) $3; 3$

D) $3h; 3a$

40) _____

Answer: C
Diff: 0 Type: BI

Find the domain and range of the function.

41) $F(t) = t^2 - 7$

A) D: $(-\infty, \infty)$, R: $[-7, \infty)$

B) D: $[-49, \infty)$, R: $[-7, \infty)$

C) D: $(-\infty, \infty)$, R: $(-\infty, \infty)$

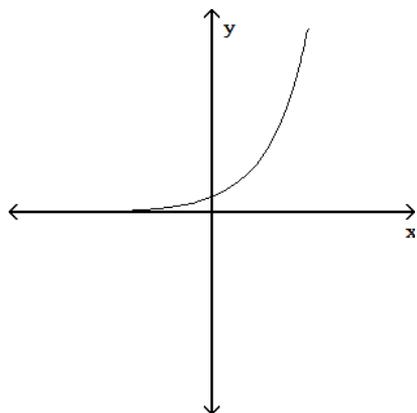
D) D: $[0, \infty)$, R: $(-\infty, -7]$

41) _____

Answer: A
Diff: 0 Type: BI

Determine whether or not the graph is a graph of a function of x.

42)



42) _____

A) Function

B) Not a function

Answer: A
Diff: 0 Type: BI

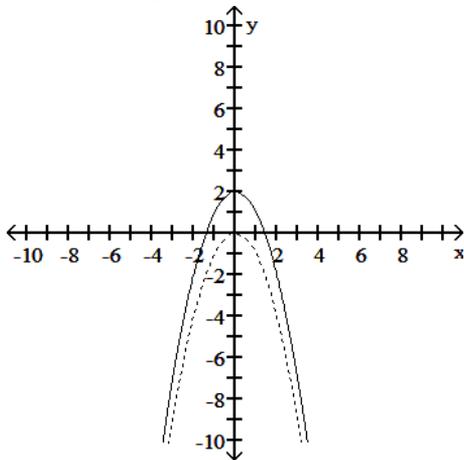
Solve the problem.

- 43) The distance an object is from the ground after being tossed from a hot air balloon 830 feet in the air 43) _____
is a function of time: $f(t) = -16.1t^2 + 5.6t + 830$, where $f(t)$ is height and t is the amount of time the
object has been in the air. Predict the height of the object after 5.5 seconds.
A) 373.78 feet B) 0 feet C) 312.18 feet D) 772.25 feet

Answer: A

Diff: 0 Type: BI

- 44) The accompanying figure shows the graph of $y = -x^2$ shifted to a new position. Write the equation 44) _____
for the new graph.



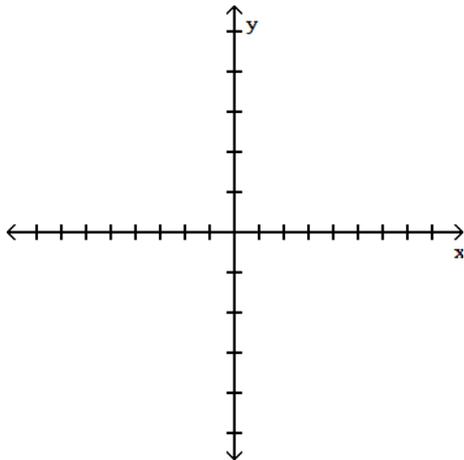
- A) $y = -x^2 + 2$ B) $y = -(x - 2)^2$ C) $y = -x^2 - 2$ D) $y = -(x + 2)^2$

Answer: A

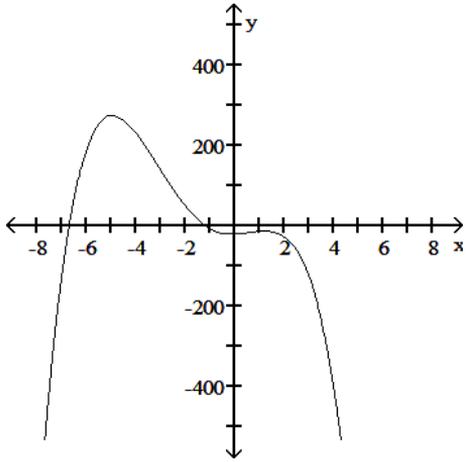
Diff: 0 Type: BI

Determine an appropriate viewing window for the given function and use it to display its graph.

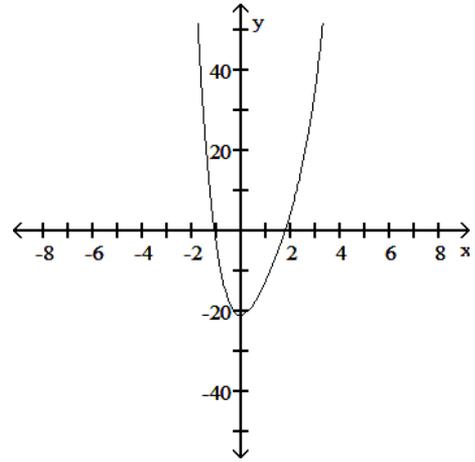
- 45) $f(x) = x^4 - 5x^3 + 12x^2 + x - 21$ 45) _____



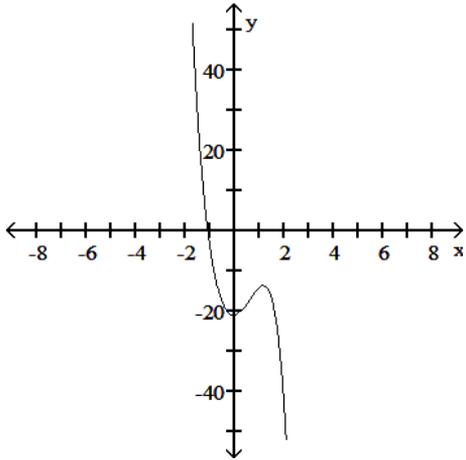
A)



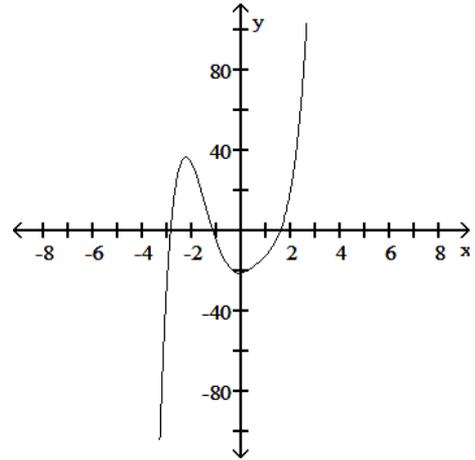
B)



C)



D)

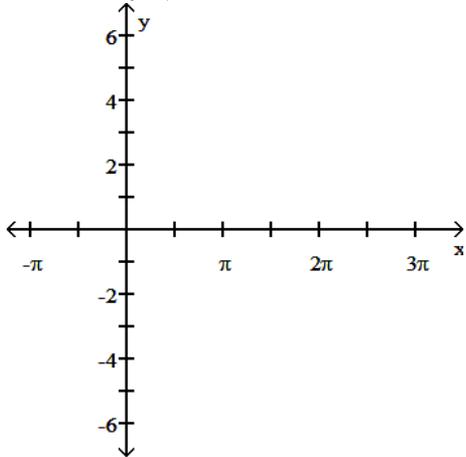


Answer: B

Diff: 0 Type: BI

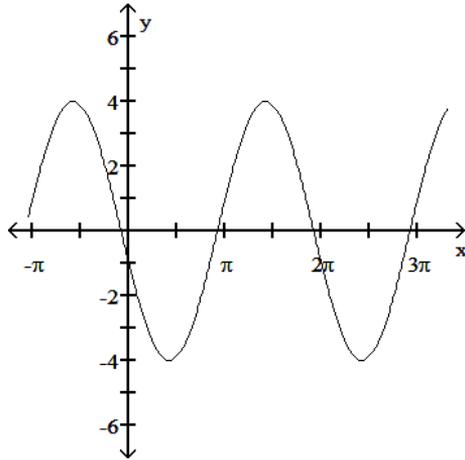
Graph the function.

46) $y = -4 \sin\left(\frac{1}{4}x\right)$

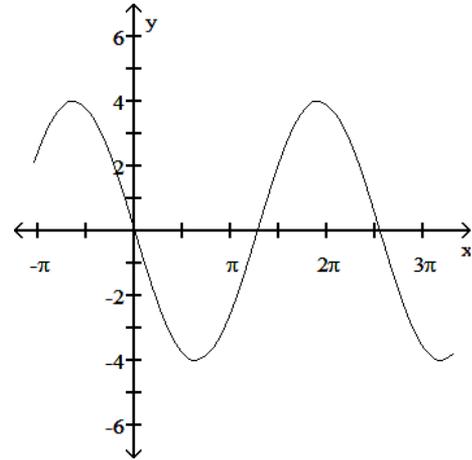


46) _____

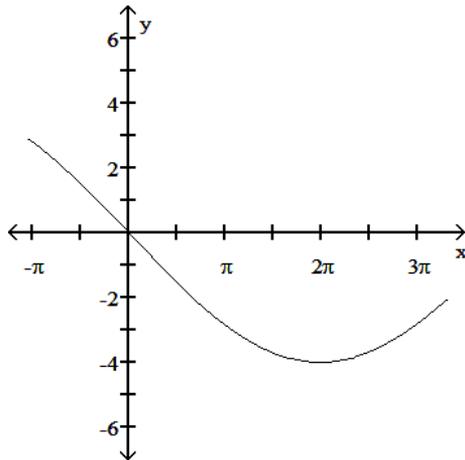
A)



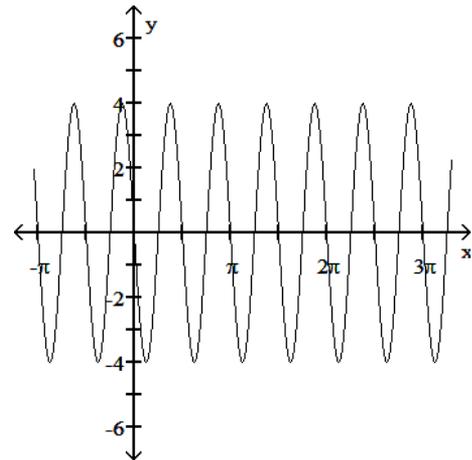
B)



C)



D)



Answer: C

Diff: 0 Type: BI

Without graphing the function, determine its amplitude or period as requested.

47) $y = \sin 5x$ Find the period.

A) 5

B) 1

C) 2π D) $\frac{2\pi}{5}$

47) _____

Answer: D

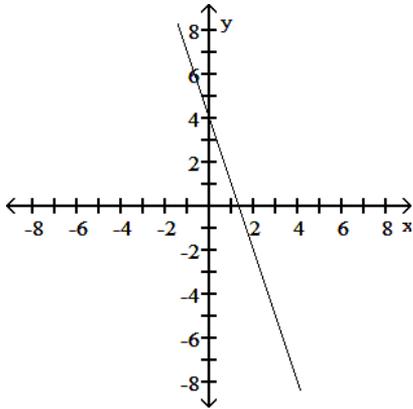
Diff: 0 Type: BI

Choose the graph that matches the function.

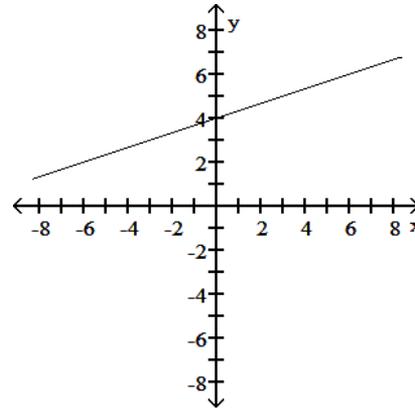
48) $f(x) = \frac{1}{3}x + 4$

48) _____

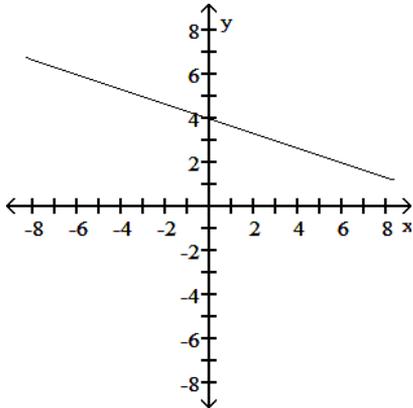
A)



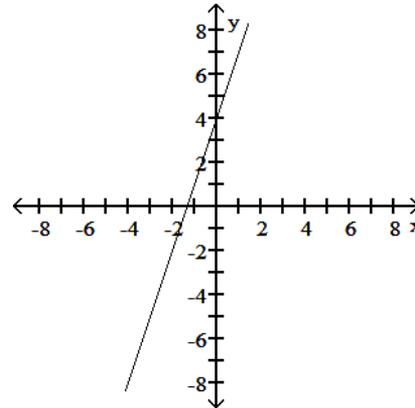
B)



C)



D)



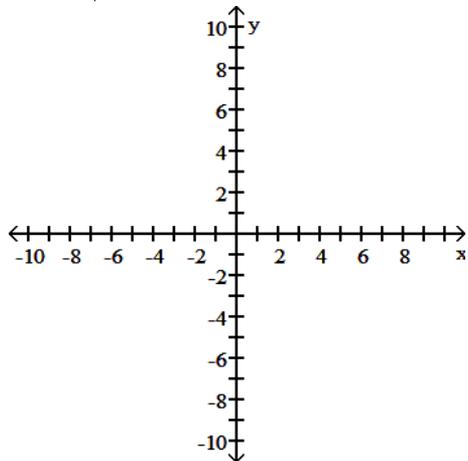
Answer: B

Diff: 0 Type: MC

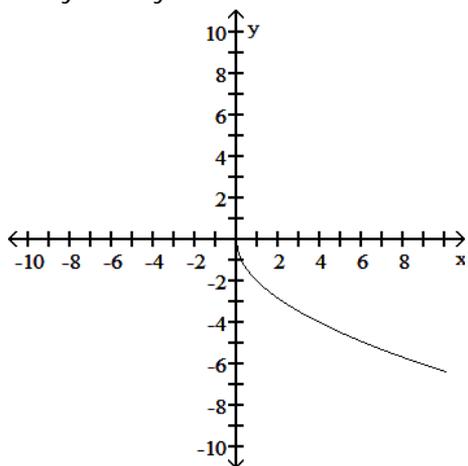
Graph the function. Determine the symmetry, if any, of the function.

49) $y = -2\sqrt{x}$

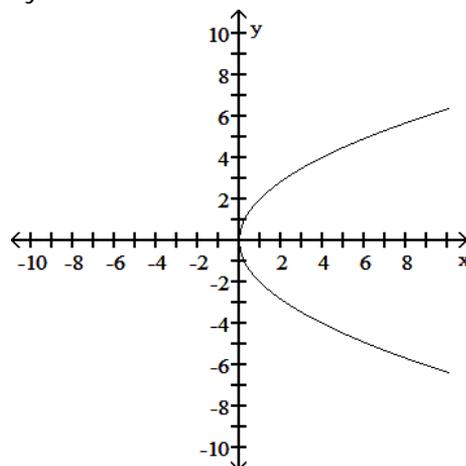
49) _____



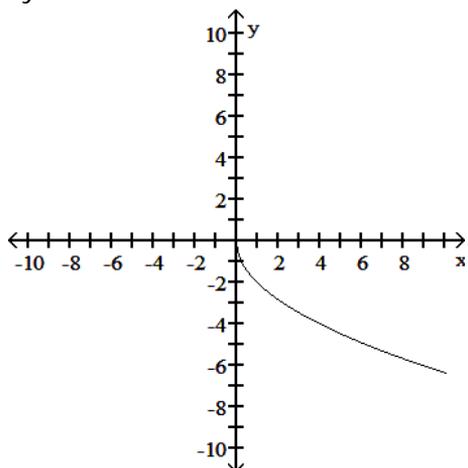
A) No symmetry



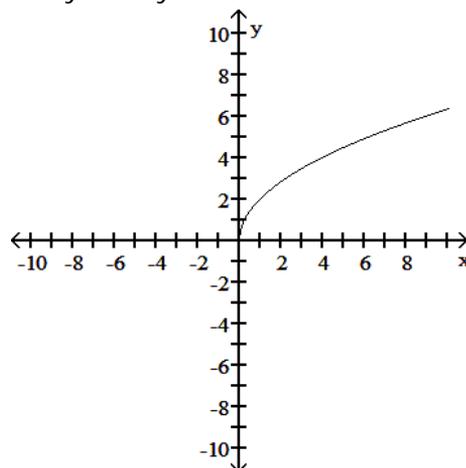
B) Symmetric about the x-axis



C) Symmetric about the x-axis



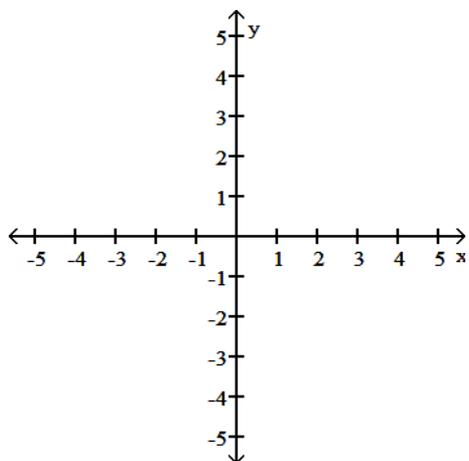
D) No symmetry



Answer: A

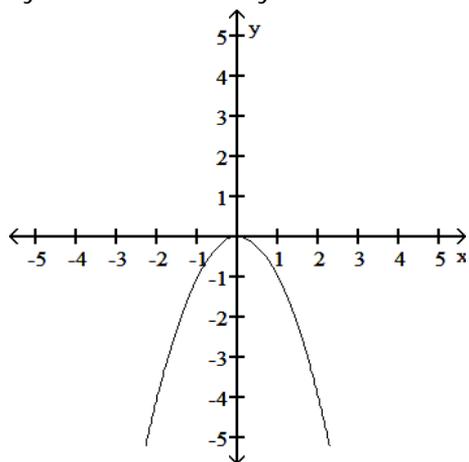
Diff: 0 Type: BI

50) $y = -\frac{1}{x^2}$

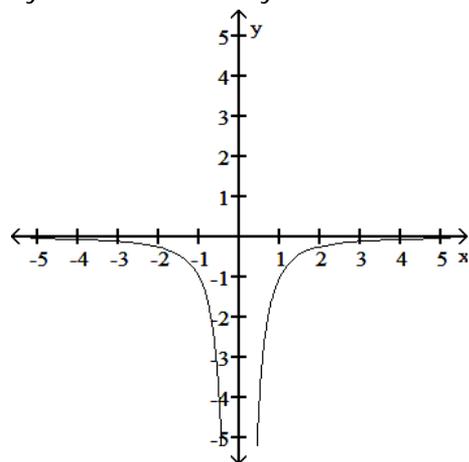


50) _____

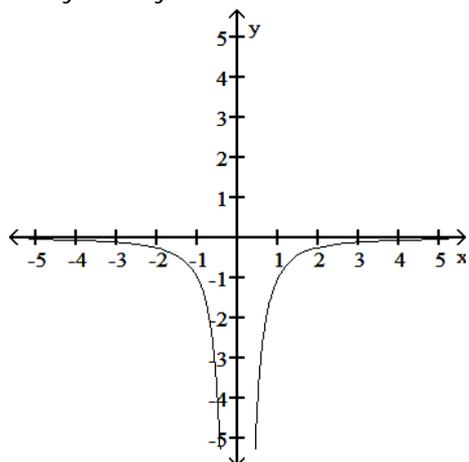
A) Symmetric about the y-axis



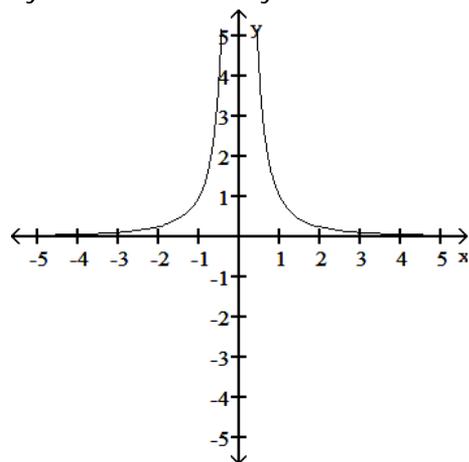
B) Symmetric about the y-axis



C) No symmetry



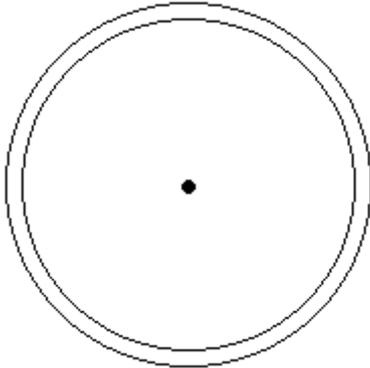
D) Symmetric about the y-axis



Answer: B
Diff: 0 Type: BI

Solve the problem.

- 51) Earth is approximately circular in cross section, with a circumference at the equator of 24,882 miles. Suppose that two ropes are used to create two concentric circles. One is created by wrapping a rope around the equator and the other is created using a rope 48 feet longer. How much space is between the ropes? Round the result to two decimal places. 51) _____



- A) About 13.37 feet
B) About 40,336.23 feet
C) About 7.64 feet
D) About 6.05 feet

Answer: C

Diff: 0 Type: BI

Determine an appropriate domain of the function. Identify the independent and dependent variables.

- 52) A cylindrical water tank with a radius of 11 feet and a height of 68 feet is filled to a height of h . The volume V of water (in cubic feet) is given by the function $g(h) = 121\pi h$. 52) _____

- A) $D = [0, 8,228\pi]$
The independent variable is V .
The dependent variable is h .
B) $D = [0, 68]$
The independent variable is h .
The dependent variable is V .
C) $D = [0, 68]$
The independent variable is V .
The dependent variable is h .
D) $D = [0, 121]$
The independent variable is h .
The dependent variable is V .

Answer: B

Diff: 0 Type: BI

Solve the problem.

- 53) A construction company buys a truck for \$40,000. The truck is expected to last 15 years, at which time it will be worth \$4000. Write a function $v(x)$ that describes the value of the truck at any time during its lifetime. Be sure to state the domain of the function. 53) _____

- A) $v(x) = 40,000 - 2400t$, with domain $0 \leq t \leq 15$
B) $v(x) = 40,000 - 2500t$, with domain $0 \leq t \leq 15$
C) $v(x) = 40,000 - 2300t$, with domain $0 \leq t \leq 15$
D) $v(x) = 40,000 + 2400t$, with domain $0 \leq t \leq 15$

Answer: A

Diff: 0 Type: BI

Without graphing the function, determine its amplitude or period as requested.

- 54) $y = 4 \sin 3x$ Find the amplitude. 54) _____

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

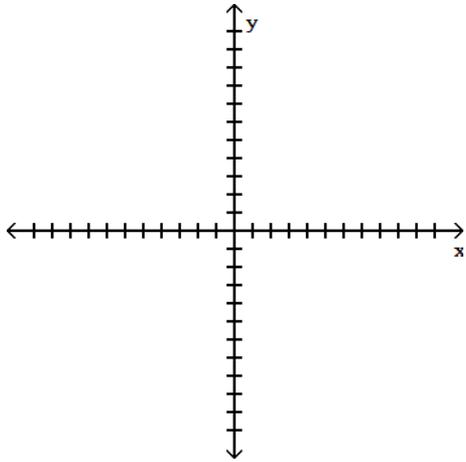
Answer: B

Diff: 0 Type: BI

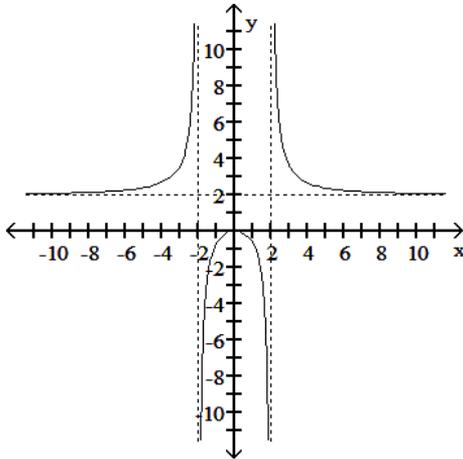
Determine an appropriate viewing window for the given function and use it to display its graph.

55) $f(x) = \frac{x^3}{x^2 + 4}$

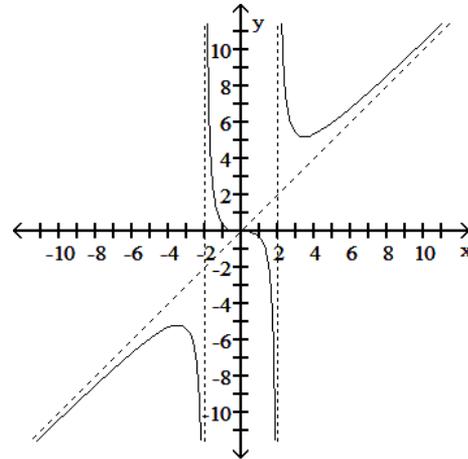
55) _____



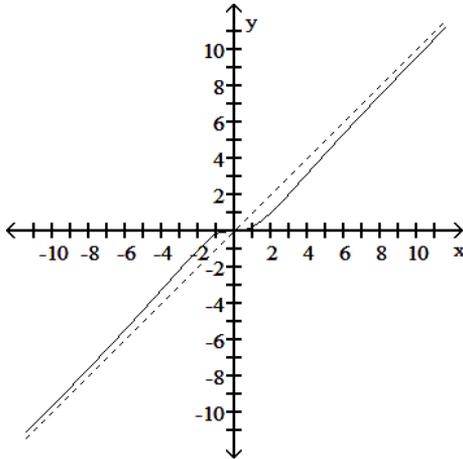
A)



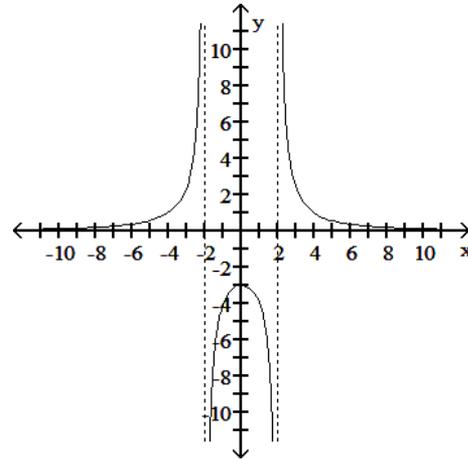
B)



C)



D)



Answer: C

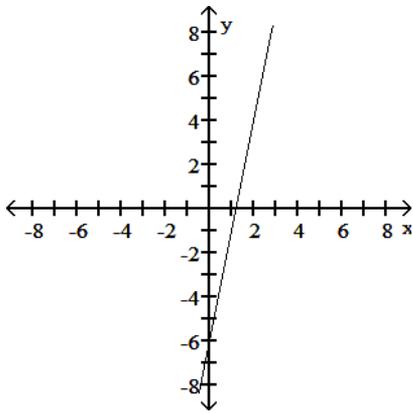
Diff: 0 Type: BI

Choose the graph that matches the function.

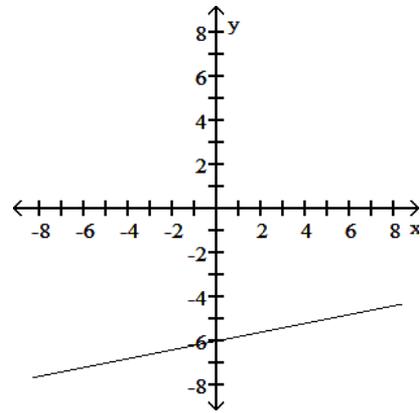
56) $f(x) = 5x - 6$

56) _____

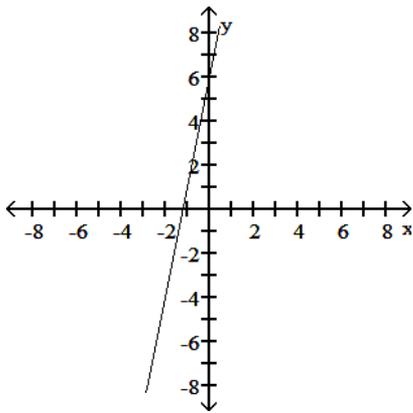
A)



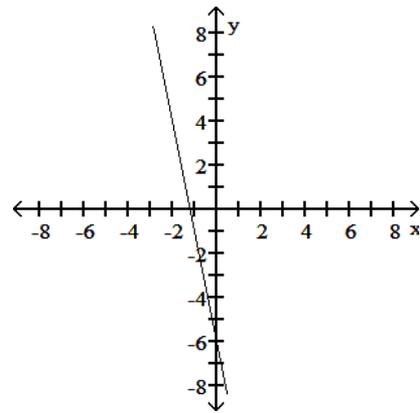
B)



C)



D)



Answer: A

Diff: 0 Type: MC

Solve for the angle θ , where $0 \leq \theta \leq 2\pi$

57) $\sin^2\theta = \frac{3}{4}$

57) _____

A) $\theta = \frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4}$

B) $\theta = 0, \pi, 2\pi$

C) $\theta = \frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{5\pi}{3}$

D) $\theta = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}$

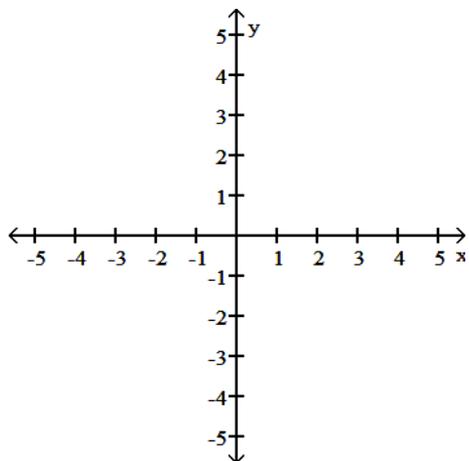
Answer: C

Diff: 0 Type: BI

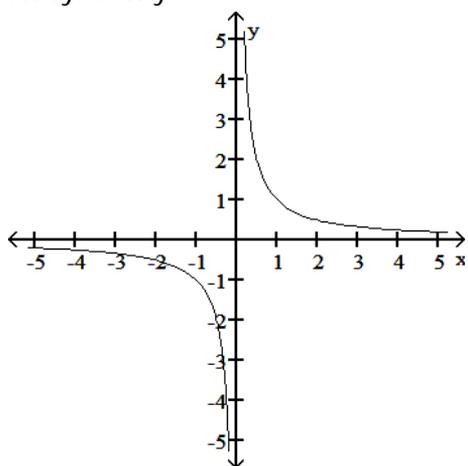
Graph the function. Determine the symmetry, if any, of the function.

58) $y = \frac{1}{x}$

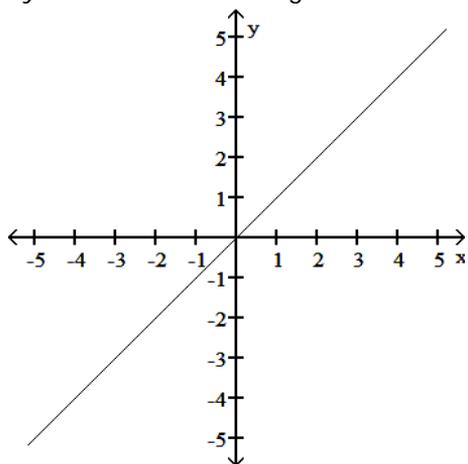
58) _____



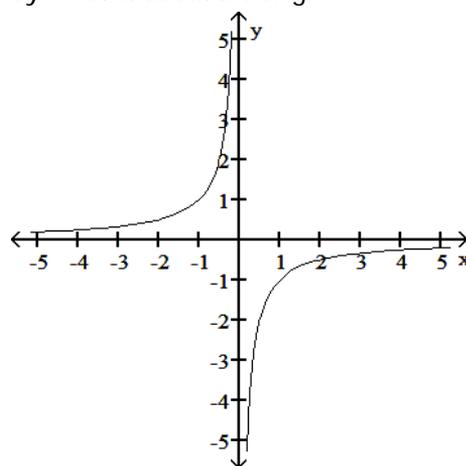
A) No symmetry



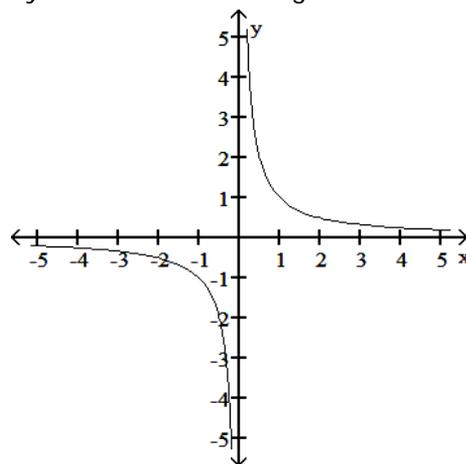
C) Symmetric about the origin



B) Symmetric about the origin



D) Symmetric about the origin



Answer: D

Diff: 0 Type: BI

Solve for the angle θ , where $0 \leq \theta \leq 2\pi$

59) $\sin^2\theta = \frac{1}{4}$

59) _____

A) $\theta = 0, \pi, 2\pi$

B) $\theta = \frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{5\pi}{3}$

C) $\theta = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}$

D) $\theta = \frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4}$

Answer: C

Diff: 0 Type: BI

Evaluate the requested trigonometric function using the information given.

60) $\cos\theta = \frac{1}{6}; 0 < \theta < \pi/2$

60) _____

Find $\sec\theta$.

A) 6

B) $\frac{\sqrt{35}}{35}$

C) -6

D) $\sqrt{35}$

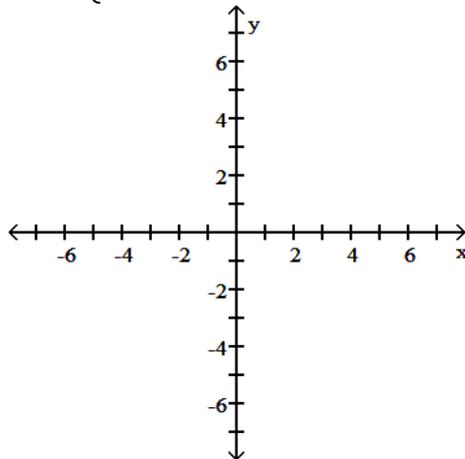
Answer: A

Diff: 0 Type: BI

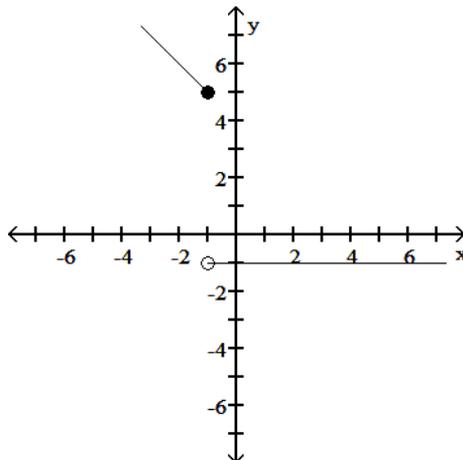
Graph the function.

61) $g(x) = \begin{cases} -1 & x \leq 0 \\ x + 5 & x > 0 \end{cases}$

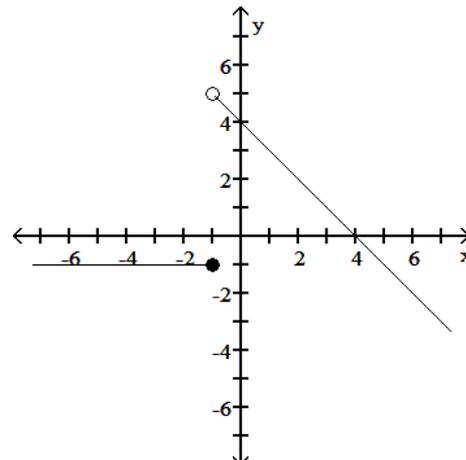
61) _____



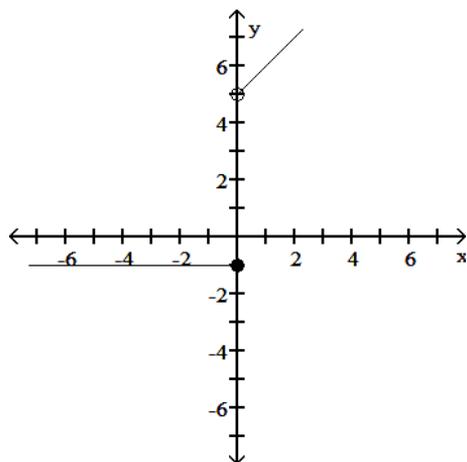
A)



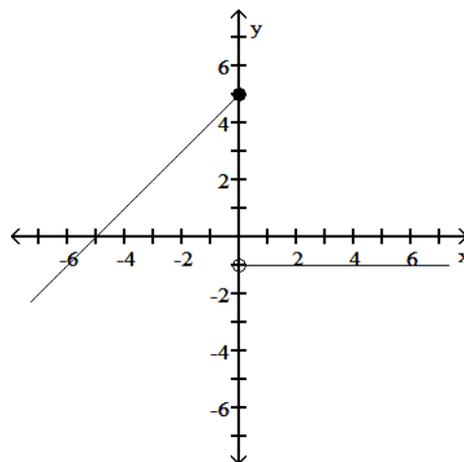
B)



C)



D)

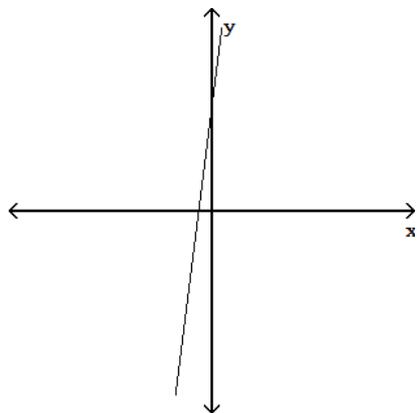


Answer: C

Diff: 0 Type: BI

Determine whether or not the graph is a graph of a function of x.

62)



62) _____

A) Function

B) Not a function

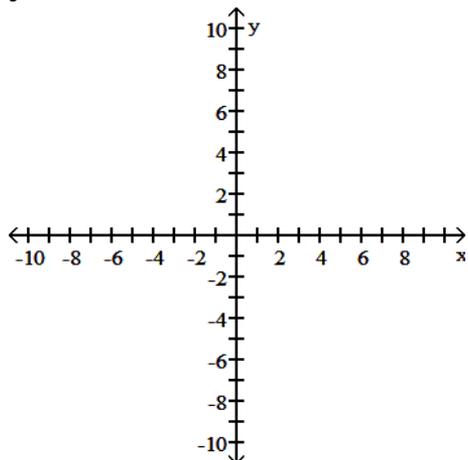
Answer: A

Diff: 0 Type: BI

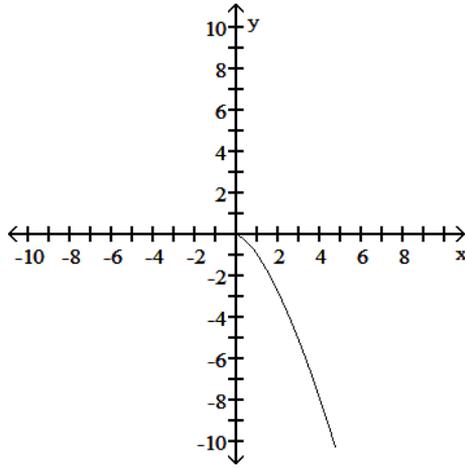
Graph the function. Determine the symmetry, if any, of the function.

63) $y = -x^{2/3}$

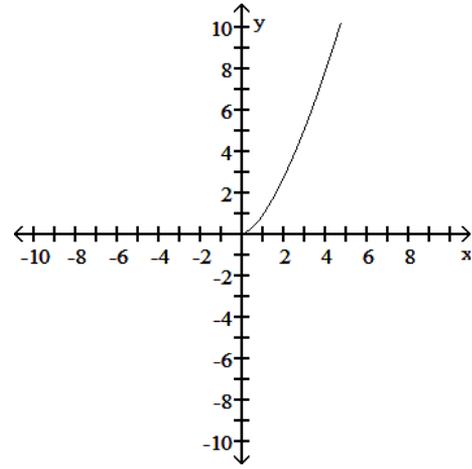
63) _____



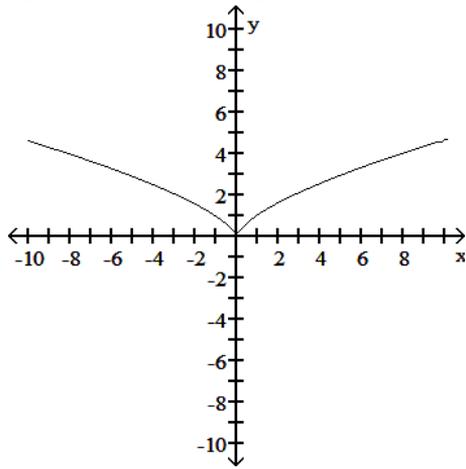
A) No symmetry



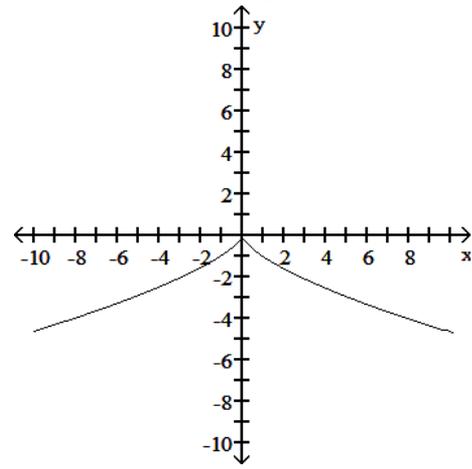
B) No symmetry



C) Symmetric about the y-axis



D) Symmetric about the y-axis



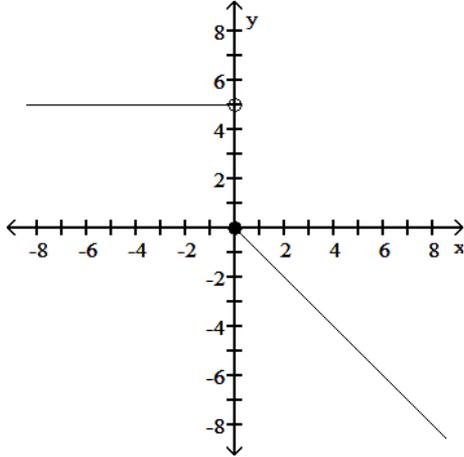
Answer: D

Diff: 0 Type: BI

Find a formula for the function graphed.

64)

64) _____



A) $f(x) = \begin{cases} 5, & x \leq 0 \\ -x, & x > 0 \end{cases}$

B) $f(x) = \begin{cases} 5, & x < 0 \\ -5x, & x \geq 0 \end{cases}$

C) $f(x) = \begin{cases} 5, & x < 0 \\ x, & x \geq 0 \end{cases}$

D) $f(x) = \begin{cases} 5, & x < 0 \\ -x, & x \geq 0 \end{cases}$

Answer: D

Diff: 0 Type: BI

Evaluate the requested trigonometric function using the information given.

65) $\cos \theta = \frac{20}{29}$; $3\pi/2 < \theta < 2\pi$

65) _____

Find $\cot \theta$.

A) $-\frac{21}{20}$

B) $\frac{29}{20}$

C) $-\frac{20}{3}$

D) $-\frac{20}{21}$

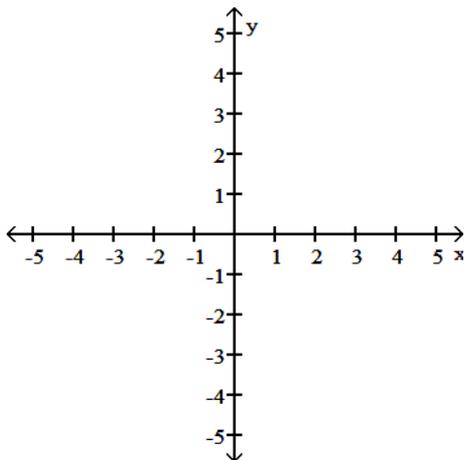
Answer: D

Diff: 0 Type: BI

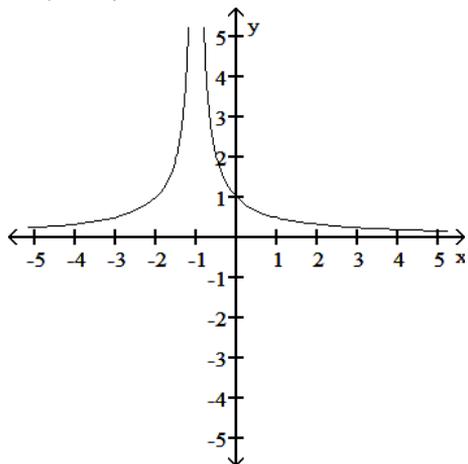
Find the domain and graph the function.

66) $G(t) = \frac{1}{|t + 1|}$

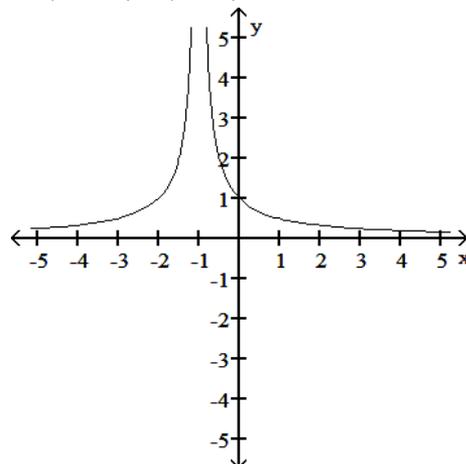
66) _____



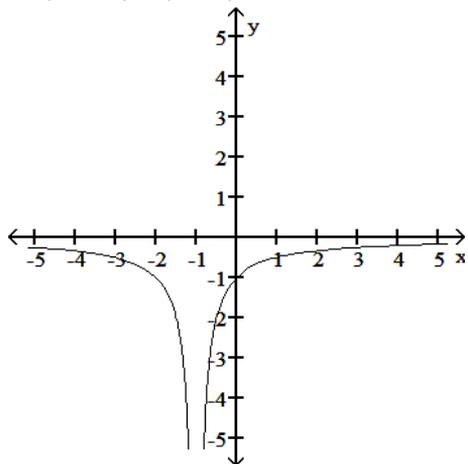
A) D: $(-\infty, \infty)$



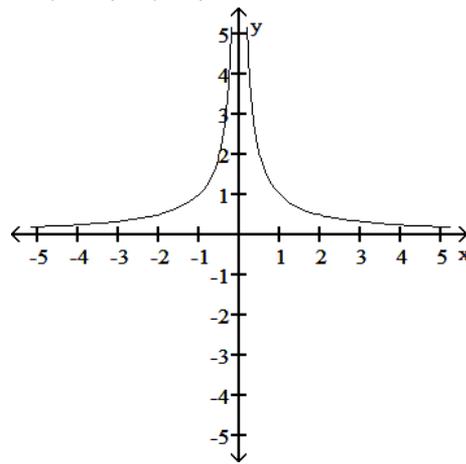
B) D: $(-\infty, -1) \cup (-1, \infty)$



C) D: $(-\infty, -1) \cup (-1, \infty)$



D) D: $(-\infty, 0) \cup (0, \infty)$

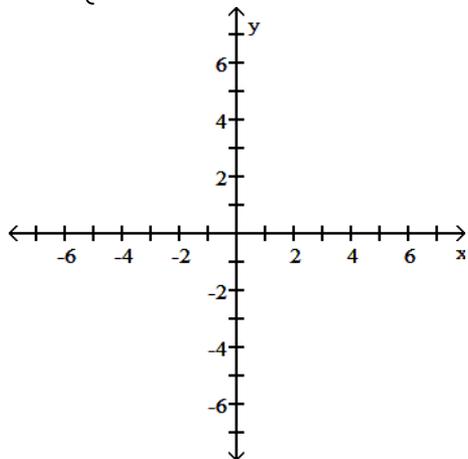


Answer: B

Diff: 0 Type: BI

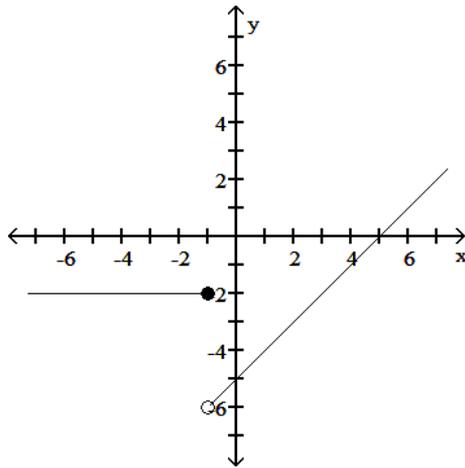
Graph the function.

$$67) f(x) = \begin{cases} -5 - x, & x < 1 \\ -2, & x \geq 1 \end{cases}$$

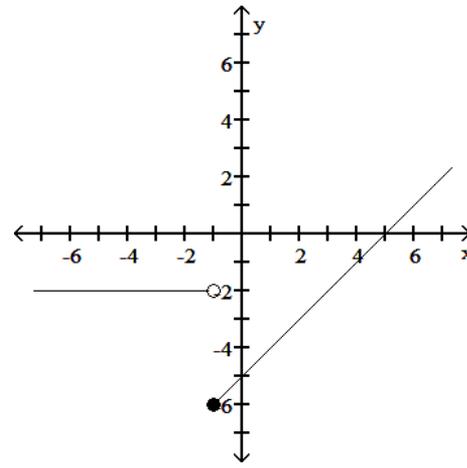


67) _____

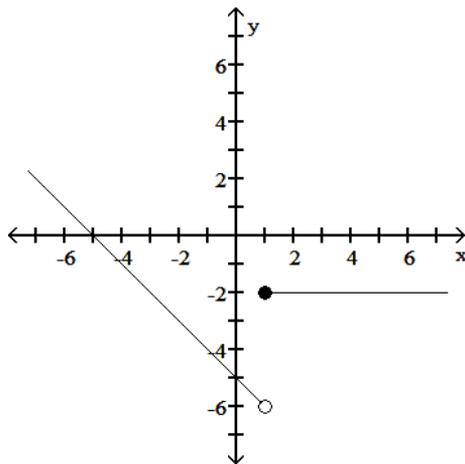
A)



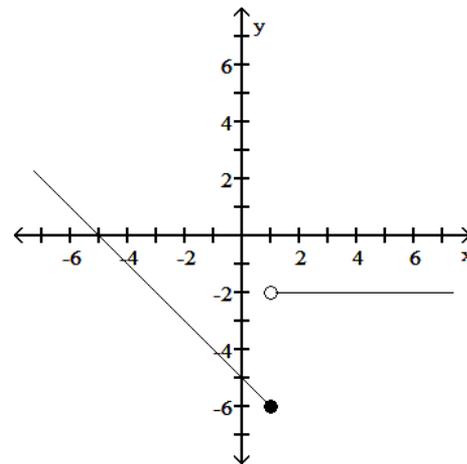
B)



C)



D)



Answer: C

Diff: 0 Type: BI

Evaluate the requested trigonometric function using the information given.

68) $\cos \theta = \frac{2}{7}$; $3\pi/2 < \theta < 2\pi$

68) _____

Find $\sin \theta$.

A) $-3\sqrt{5}$

B) $-\frac{7}{2}$

C) $-\frac{3\sqrt{5}}{7}$

D) $-\frac{3\sqrt{5}}{2}$

Answer: C

Diff: 0 Type: BI

Without graphing the function, determine its amplitude or period as requested.

69) $y = \frac{7}{8} \cos\left(-\frac{8\pi}{5}x\right)$ Find the amplitude.

69) _____

A) $\frac{5}{4}$

B) $\frac{7}{8}$

C) $\frac{8\pi}{7}$

D) $\frac{8\pi}{5}$

Answer: B

Diff: 0 Type: BI

Solve the problem.

70) If $f(x) = \sqrt{x}$, $g(x) = \frac{x}{4}$, and $h(x) = 4x + 16$, find $h(g(f(x)))$.

70) _____

A) $\sqrt{x+4}$

B) $\sqrt{x} + 16$

C) $\sqrt{x} + 4$

D) $4\sqrt{x} + 16$

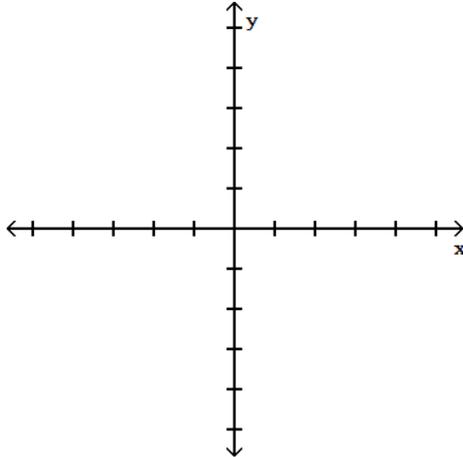
Answer: B

Diff: 0 Type: BI

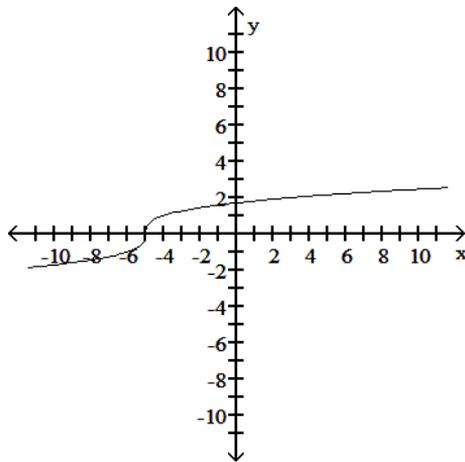
Determine an appropriate viewing window for the given function and use it to display its graph.

71) $f(x) = \sqrt[3]{x-5}$

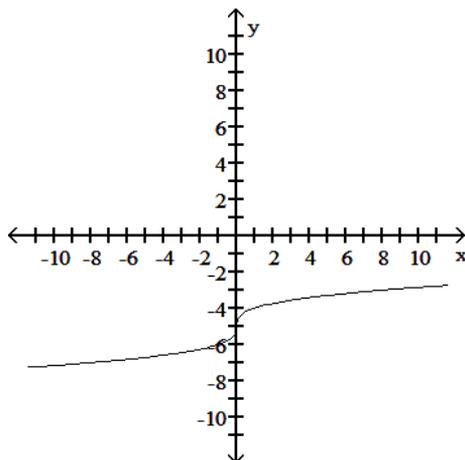
71) _____



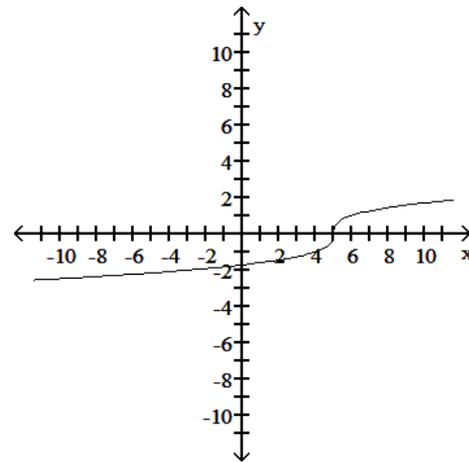
A)



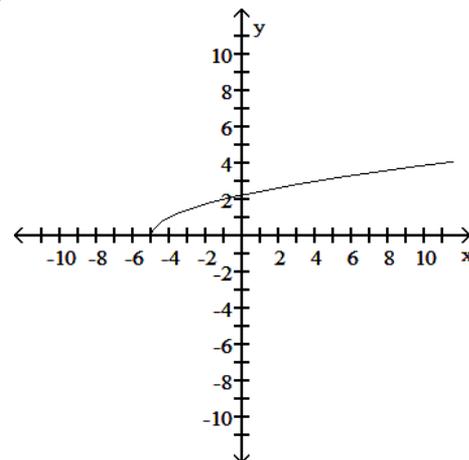
C)



B)



D)

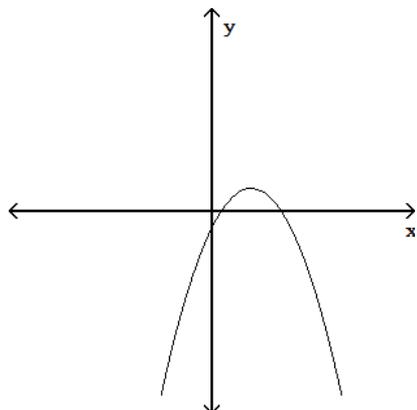


Answer: B
Diff: 0 Type: BI

Determine whether or not the graph is a graph of a function of x .

72)

72) _____



A) Function

B) Not a function

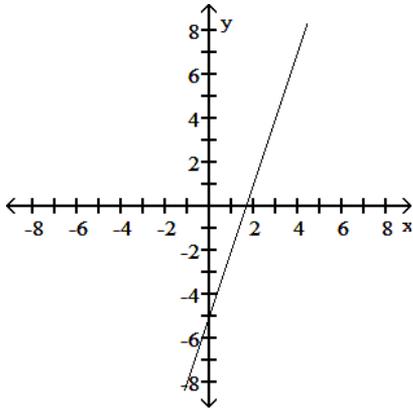
Answer: A
Diff: 0 Type: BI

Choose the graph that matches the function.

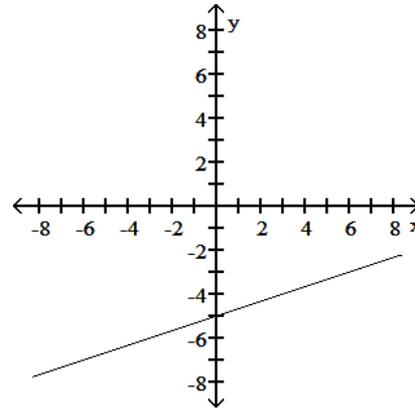
73) $f(x) = \frac{1}{3}x - 5$

73) _____

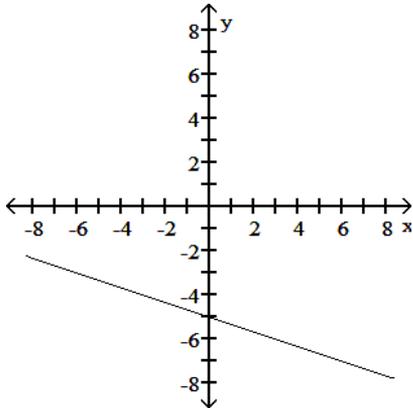
A)



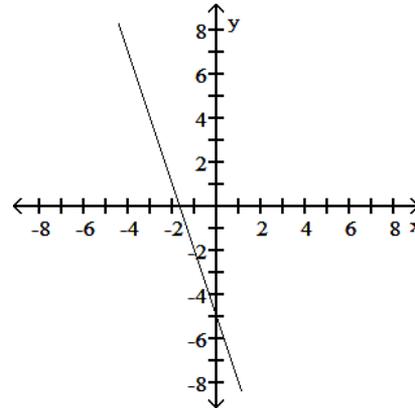
B)



C)



D)



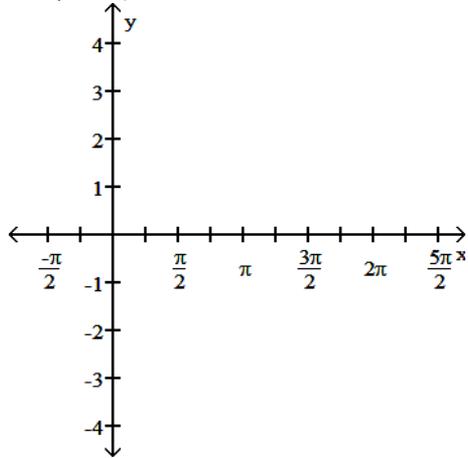
Answer: B

Diff: 0 Type: MC

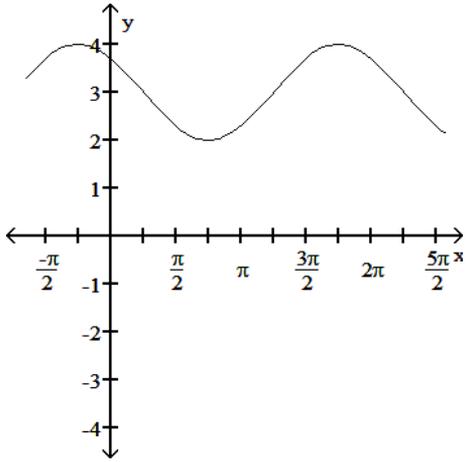
Graph the function.

74) $\cos\left(x - \frac{\pi}{4}\right) + 3$

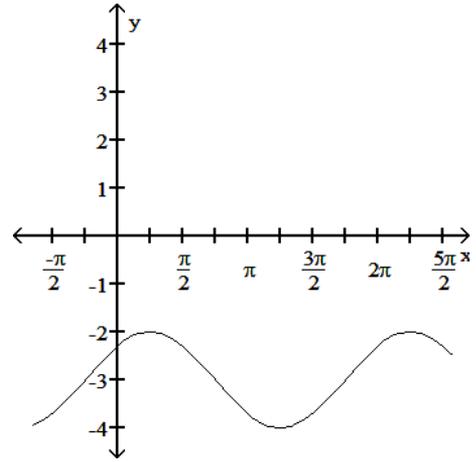
74) _____



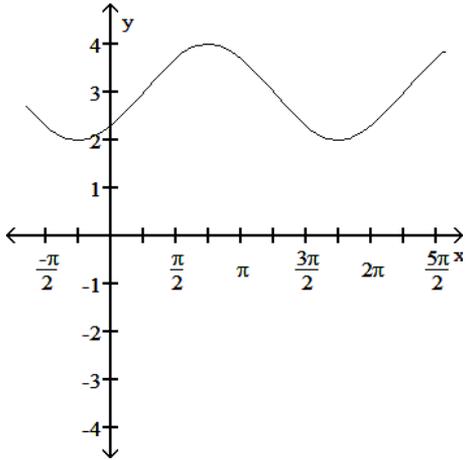
A)



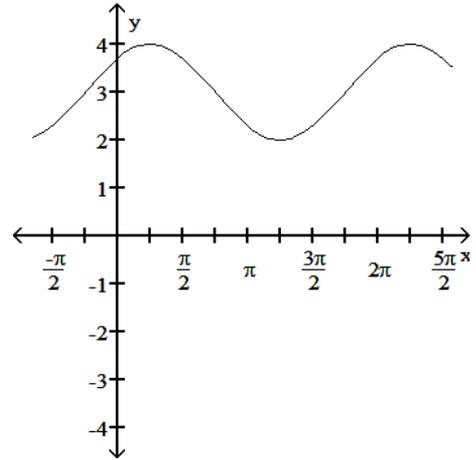
B)



C)



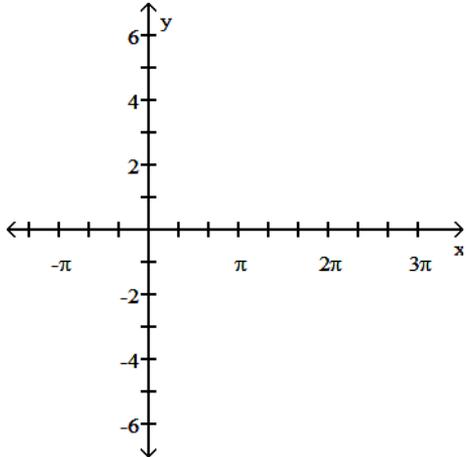
D)



Answer: D

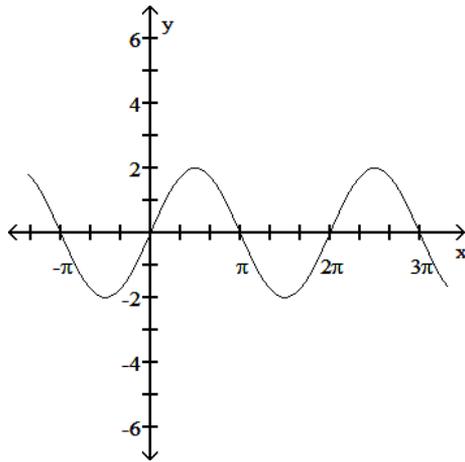
Diff: 0 Type: BI

75) $y = 2 \cos(\pi x)$

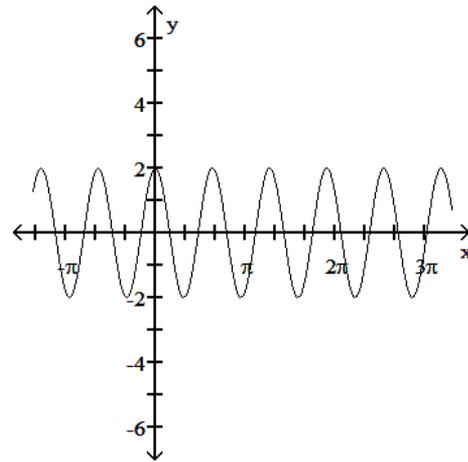


75) _____

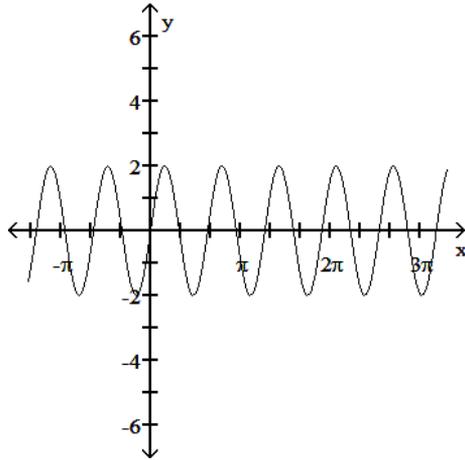
A)



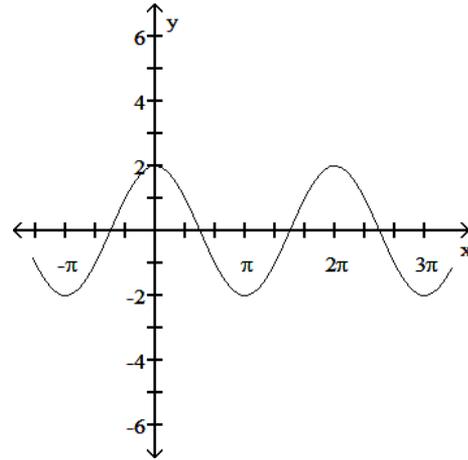
B)



C)



D)

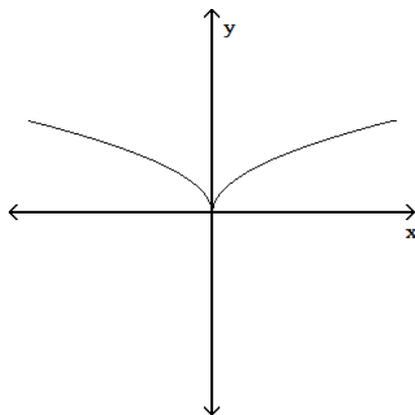


Answer: B

Diff: 0 Type: BI

Determine whether or not the graph is a graph of a function of x.

76)



A) Function

B) Not a function

Answer: A

Diff: 0 Type: BI

76) _____

Simplify the difference quotients $\frac{f(x+h) - f(x)}{h}$ and $\frac{f(x) - f(a)}{x - a}$ for the following function. Rationalize the numerator when necessary.

77) $f(x) = \frac{5}{x}$

77) _____

A) $\frac{10}{x+h}; \frac{10}{x-a}$

B) $-\frac{5}{x+h}; -\frac{5}{x-a}$

C) $-\frac{5}{x(x+h)}; -\frac{5}{ax}$

D) $\frac{10}{x(x+h)}; \frac{10}{ax}$

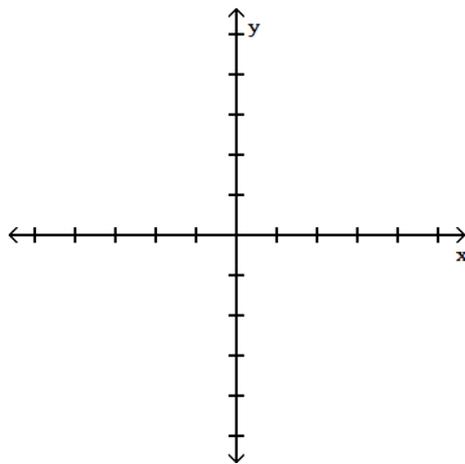
Answer: C

Diff: 0 Type: BI

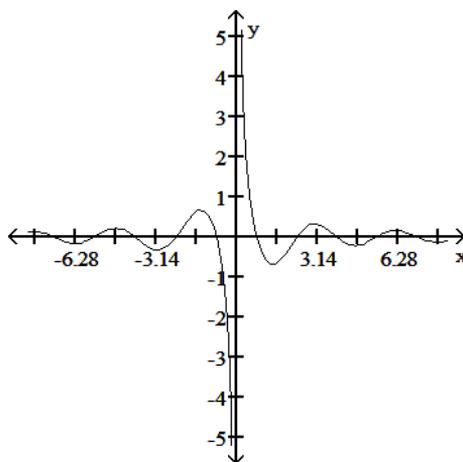
Determine an appropriate viewing window for the given function and use it to display its graph.

78) $f(x) = \frac{\sin 2x}{x}$

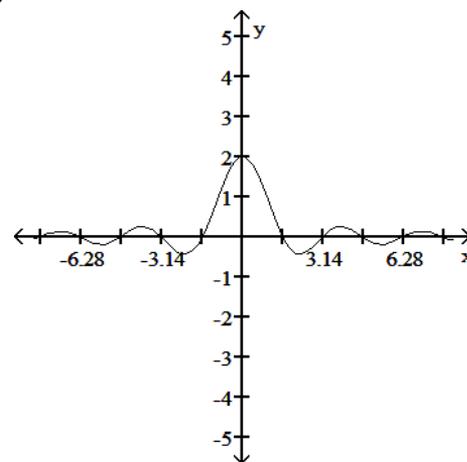
78) _____



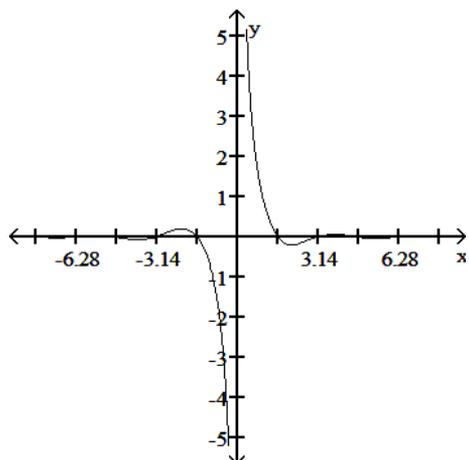
A)



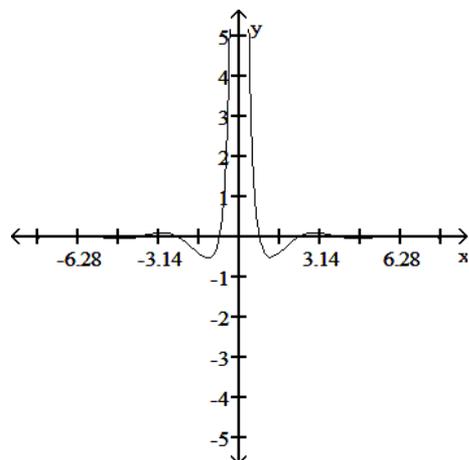
B)



C)



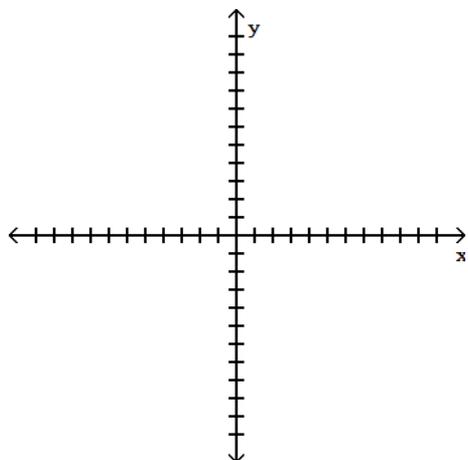
D)



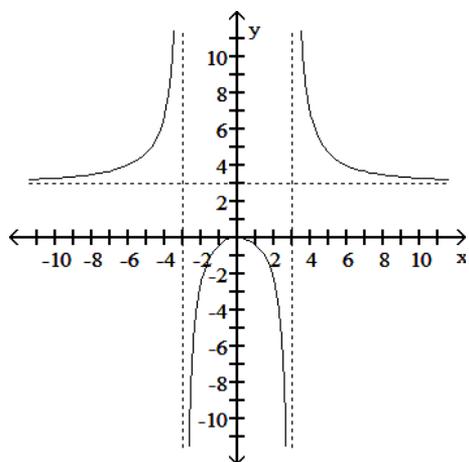
Answer: B
 Diff: 0 Type: BI

79) $f(x) = \frac{3x^2}{x^2 - 9}$

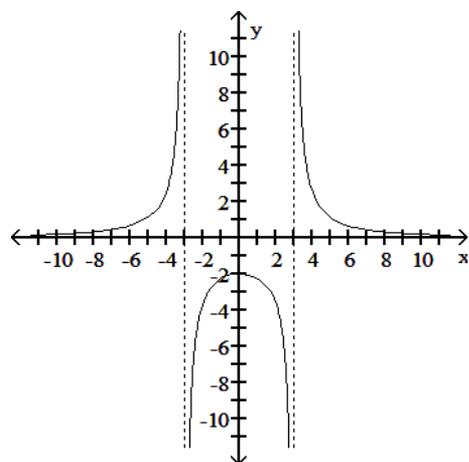
79) _____



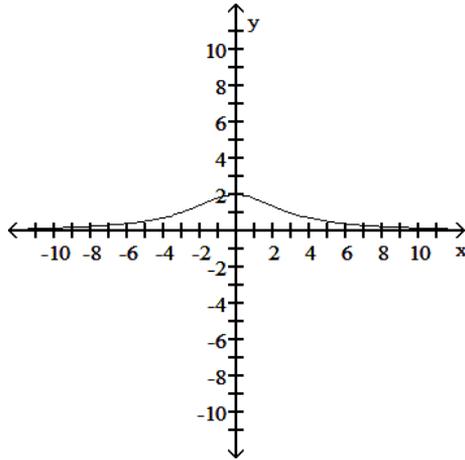
A)



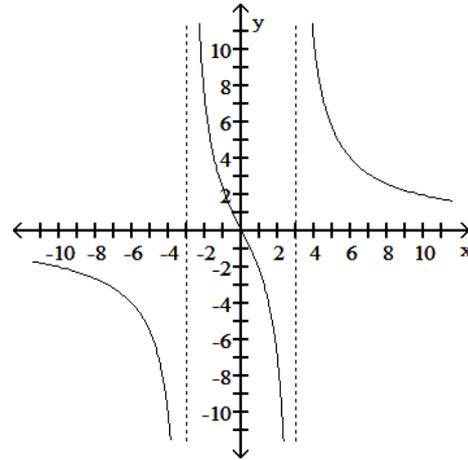
B)



C)



D)



Answer: A

Diff: 0 Type: BI

Simplify the difference quotients $\frac{f(x+h) - f(x)}{h}$ and $\frac{f(x) - f(a)}{x - a}$ for the following function. Rationalize the numerator when necessary.

80) $f(x) = -\frac{6}{\sqrt{x}}$

80) _____

A) $-\frac{6}{\sqrt{x}(x+h) + x\sqrt{x+h}}; -\frac{6}{x\sqrt{a} + a\sqrt{x}}$

B) $\frac{6}{\sqrt{x}(x+h) - x\sqrt{x+h}}; \frac{6}{x\sqrt{a} - a\sqrt{x}}$

C) $\frac{6}{x\sqrt{x+h} - \sqrt{x}(x+h)}; \frac{6}{a\sqrt{x} - x\sqrt{a}}$

D) $\frac{6}{\sqrt{x}(x+h) + x\sqrt{x+h}}; \frac{6}{x\sqrt{a} + a\sqrt{x}}$

Answer: D

Diff: 0 Type: BI

Describe how to transform the graph of f into the graph of g.

81) $f(x) = \sqrt{x}$ and $g(x) = \frac{1}{5}\sqrt{x}$

81) _____

A) Vertical scaling by a factor of 5

B) Horizontal scaling by a factor of 5

C) Vertical scaling by a factor of $\frac{1}{5}$

D) Horizontal scaling by a factor of $\frac{1}{5}$

Answer: C

Diff: 0 Type: BI

Express the given function as a composite of functions f and g such that $y = f(g(x))$.

82) $y = \frac{6}{\sqrt{5x+4}}$

82) _____

A) $f(x) = \frac{6}{x}$, $g(x) = 5x + 4$

B) $f(x) = \frac{6}{\sqrt{x}}$, $g(x) = 5x + 4$

C) $f(x) = 6$, $g(x) = \sqrt{5x+4}$

D) $f(x) = \sqrt{5x+4}$, $g(x) = 6$

Answer: B

Diff: 0 Type: BI

Without graphing the function, determine its amplitude or period as requested.

83) $y = -5 \sin x$ Find the amplitude.

A) 5

B) 2π

C) $\frac{\pi}{5}$

D) -5π

83) _____

Answer: A

Diff: 0 Type: BI

Find the domain and range of the function.

84) $f(x) = 5 - x^2$

A) D: $(-\infty, \infty)$, R: $(-\infty, 5]$

B) D: $(-\infty, 5]$, R: $(-\infty, \infty)$

C) D: $(-\infty, \infty)$, R: $(-\infty, \infty)$

D) D: $(-\infty, \infty)$, R: $[5, \infty)$

84) _____

Answer: A

Diff: 0 Type: BI

Solve the problem.

85) Let $f(x) = \frac{x}{x-9}$. Find a function $y = g(x)$ so that $(f \circ g)(x) = x$.

A) $g(x) = \frac{1}{x-9}$

B) $g(x) = \frac{9x}{x-1}$

C) $g(x) = \frac{x-9}{9}$

D) $g(x) = x(x-9)$

85) _____

Answer: B

Diff: 0 Type: BI

86) Northwest Molded molds plastic handles which cost \$1.00 per handle to mold. The fixed cost to run the molding machine is \$3,240 per week. If the company sells the handles for \$4.00 each, how many handles must be molded weekly to break even (zero profit)?

A) 1,080 handles

B) 648 handles

C) 720 handles

D) 3,240 handles

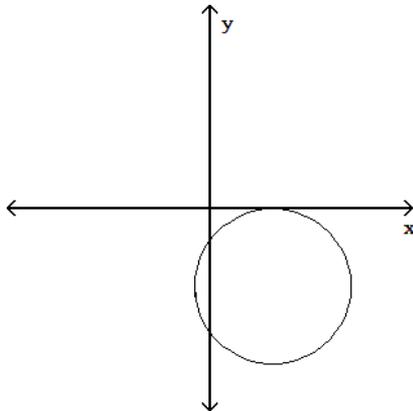
86) _____

Answer: A

Diff: 0 Type: BI

Determine whether or not the graph is a graph of a function of x .

87)



87) _____

A) Function

B) Not a function

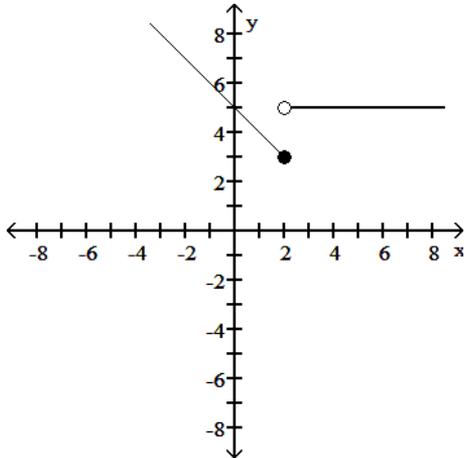
Answer: B

Diff: 0 Type: BI

Find a formula for the function graphed.

88)

88) _____



A) $f(x) = \begin{cases} 5 + x, & x < 2 \\ 5 & x > 2 \end{cases}$

C) $f(x) = \begin{cases} 5 - x, & x < 2 \\ 5 & x \geq 2 \end{cases}$

B) $f(x) = \begin{cases} 5 + x, & x \leq 2 \\ 5 & x > 2 \end{cases}$

D) $f(x) = \begin{cases} 5 - x, & x \leq 2 \\ 5 & x > 2 \end{cases}$

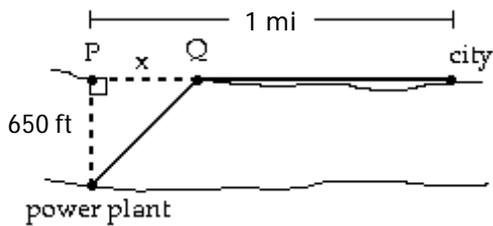
Answer: D

Diff: 0 Type: BI

Solve the problem.

89) A power plant is located on a river that is 650 feet wide. To lay a new cable from the plant to a location in a city 1 mile downstream on the opposite side costs \$225 per foot across the river and \$150 per foot along the land. Suppose that the cable goes from the plant to a point Q on the opposite side that is x feet from the point P directly opposite the plant. Write a function C(x) that gives the cost of laying the cable in terms of the distance x.

89) _____



A) $C(x) = 150\sqrt{x^2 + 650^2} + 225(5280 - x)$

C) $C(x) = 225\sqrt{x^2 + 650^2} + 150(5280 - x)$

B) $C(x) = 225(650 - x) + 150(1 - x)$

D) $C(x) = 225\sqrt{x^2 + 650^2} + 150(1 - x)$

Answer: C

Diff: 0 Type: BI

Express the given function as a composite of functions f and g such that $y = f(g(x))$.

90) $y = \frac{1}{x^2 - 9}$

90) _____

A) $f(x) = \frac{1}{x}, g(x) = x^2 - 9$

B) $f(x) = \frac{1}{x^2}, g(x) = -\frac{1}{9}$

C) $f(x) = \frac{1}{9}, g(x) = x^2 - 9$

D) $f(x) = \frac{1}{x^2}, g(x) = x - 9$

Answer: A

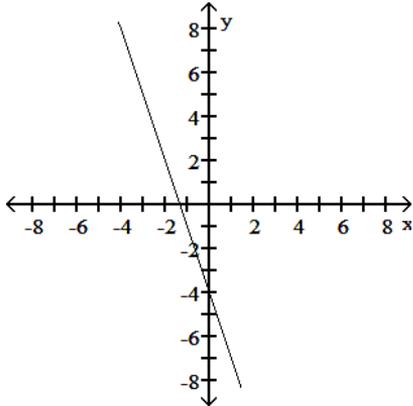
Diff: 0 Type: BI

Choose the graph that matches the function.

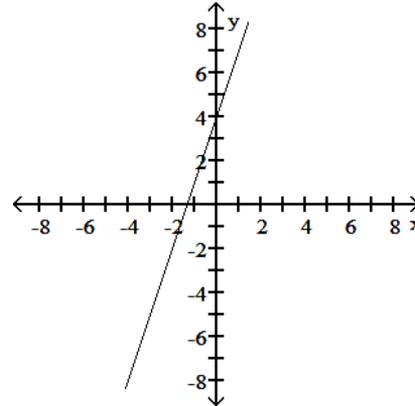
91) $f(x) = -3x + 4$

91) _____

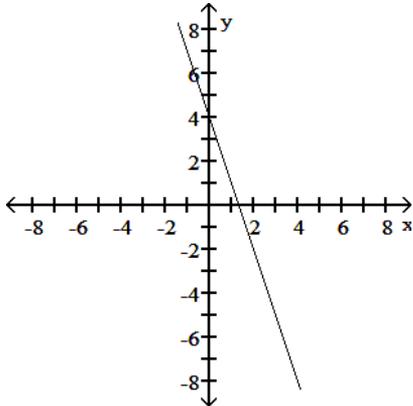
A)



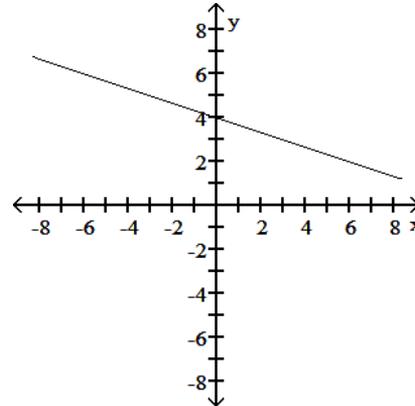
B)



C)



D)



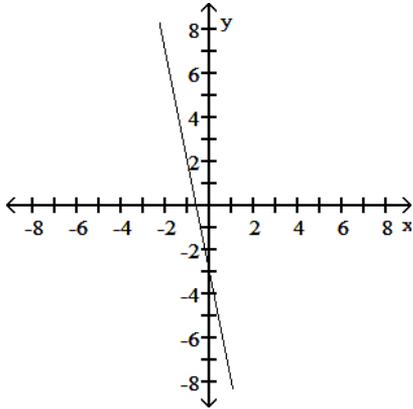
Answer: C

Diff: 0 Type: MC

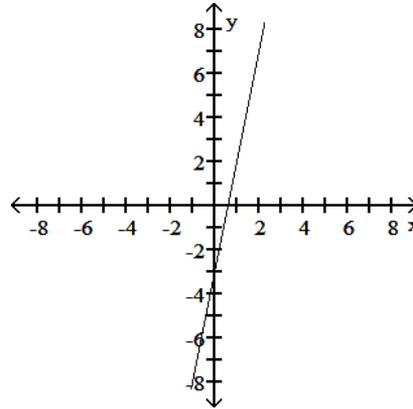
92) $f(x) = -\frac{1}{5}x - 3$

92) _____

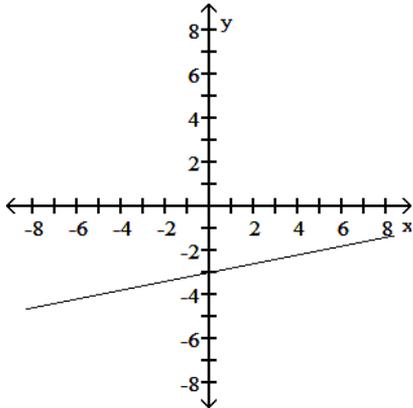
A)



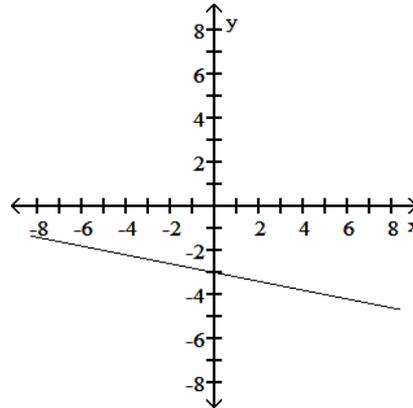
B)



C)



D)



Answer: D
Diff: 0 Type: MC

Solve the problem.

93) If $f(x) = 3x + 6$ and $g(x) = 2x - 1$, find $f(g(x))$.

- A) $6x + 3$ B) $6x + 5$

- C) $6x + 11$ D) $6x + 9$

93) _____

Answer: A
Diff: 0 Type: BI

94) If $f(x) = -6x + 2$ and $g(x) = 3x + 5$, find $g(f(x))$.

- A) $-18x + 32$ B) $-18x - 1$

- C) $18x + 11$ D) $-18x + 11$

94) _____

Answer: D
Diff: 0 Type: BI

Find the domain and range of the function.

95) $g(z) = \frac{-9}{\sqrt{z+1}}$

95) _____

- A) D: $(-1, \infty)$, R: $(-\infty, 0)$ B) D: $[0, \infty)$, R: $(-\infty, \infty)$
C) D: $[1, \infty)$, R: $(-\infty, \infty)$ D) D: $(-\infty, -1)$, R: $(0, \infty)$

Answer: A
Diff: 0 Type: BI

Evaluate the expressing using a unit circle or state that the quantity is undefined. All angles are in radians.

96) $\tan\left(\frac{\pi}{3}\right)$

96) _____

A) 2

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

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

D) $\sqrt{3}$

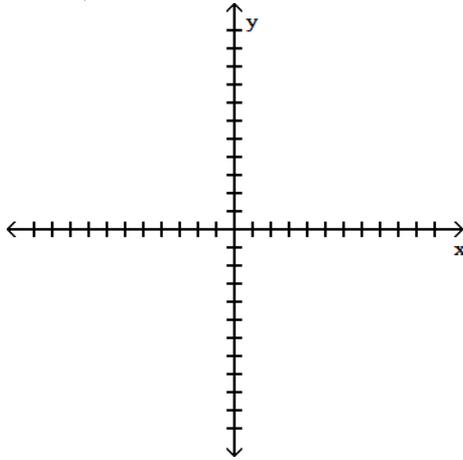
Answer: D

Diff: 0 Type: BI

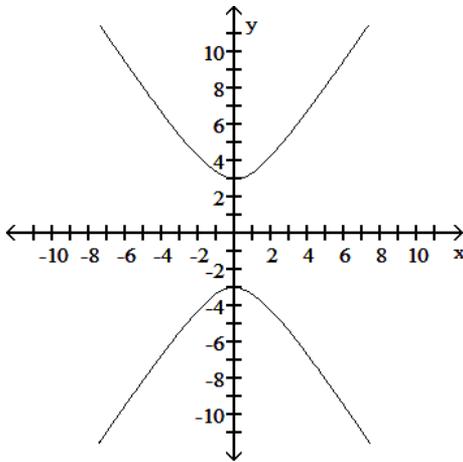
Determine an appropriate viewing window for the given function and use it to display its graph.

97) $y = 4\sqrt{\frac{9+x^2}{9}}$

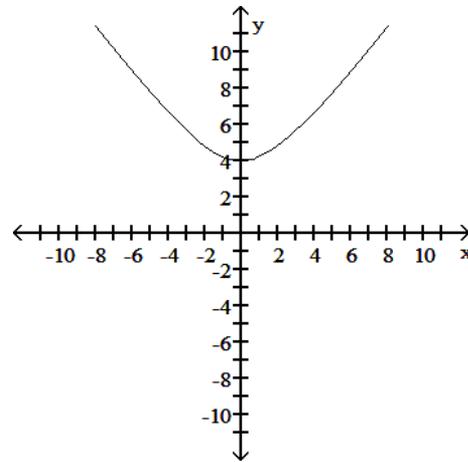
97) _____



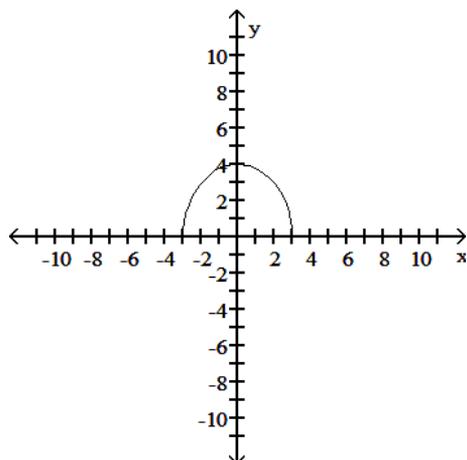
A)



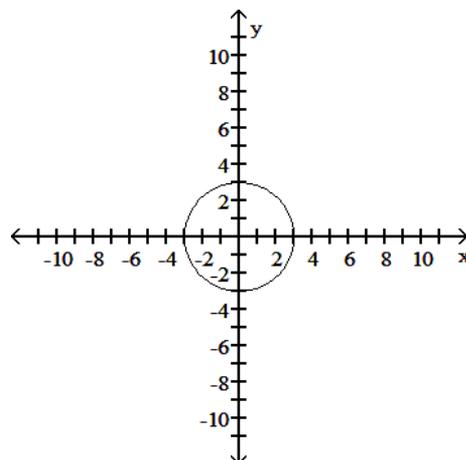
B)



C)



D)



Answer: B
Diff: 0 Type: BI

Simplify the difference quotients $\frac{f(x+h) - f(x)}{h}$ and $\frac{f(x) - f(a)}{x - a}$ for the following function. Rationalize the numerator when necessary.

98) $f(x) = 3x^3$

A) $3x^2 + 3xh + 3h^2; 3x^2 + 9ax + 9a^2$

C) $3x^2 + 3xh + 3h^2; 9x^2 + 9ax + 9a^2$

B) $9x^2 - 9x - 3h; 3x^2 - 3ax - 3a^2$

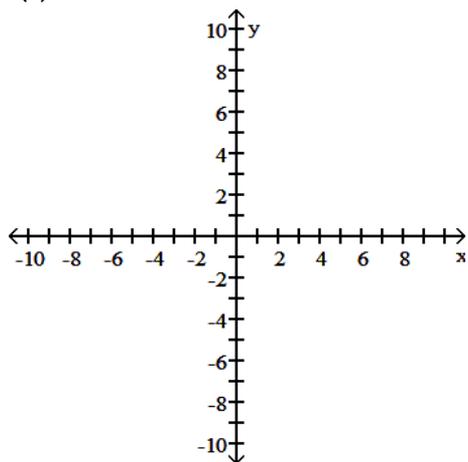
D) $9x^2 + 9xh + 3h^2; 3x^2 + 3ax + 3a^2$

98) _____

Answer: D
Diff: 0 Type: BI

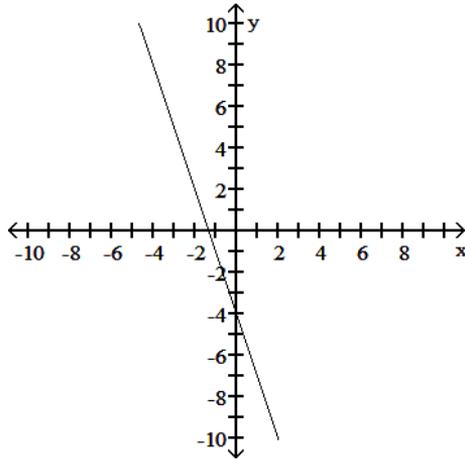
Find the domain and graph the function.

99) $f(x) = 3x - 4$

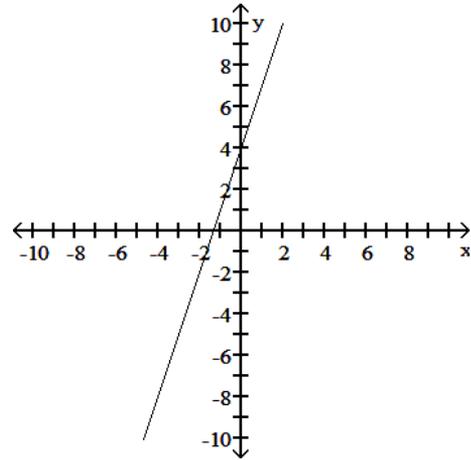


99) _____

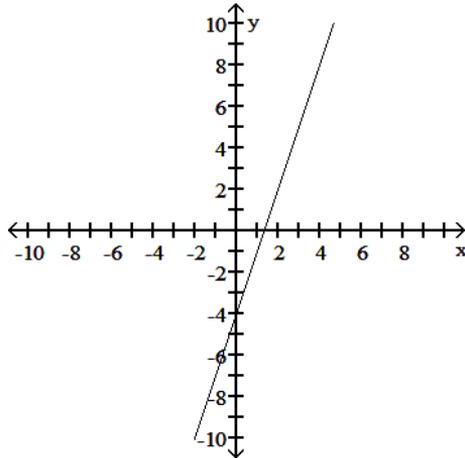
A) D: $(-\infty, \infty)$



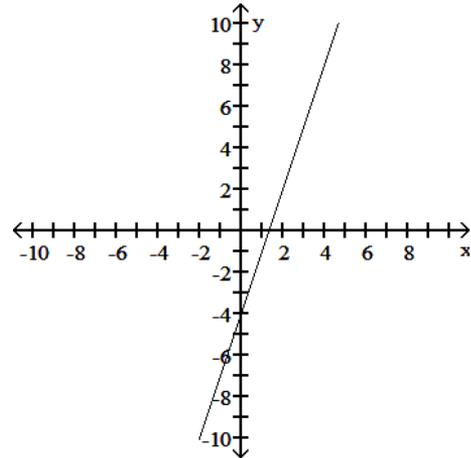
B) D: $(-\infty, \infty)$



C) D: $(-\infty, \infty)$



D) D: $[0, \infty)$



Answer: C

Diff: 0 Type: BI

Evaluate the requested trigonometric function using the information given.

100) $\sin \theta = -\frac{5}{13}$; $\pi < \theta < 3\pi/2$

100) _____

Find $\cos \theta$.

A) $-\frac{5}{12}$

B) $-\frac{13}{5}$

C) $\frac{12}{5}$

D) $-\frac{12}{13}$

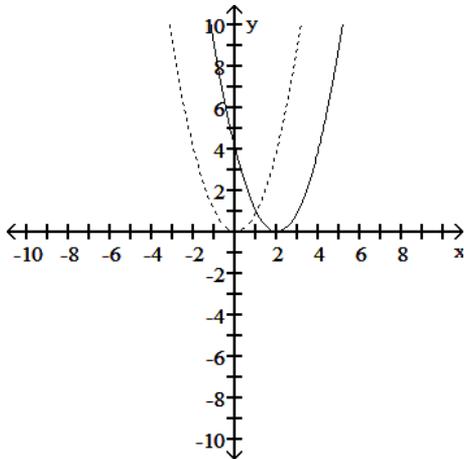
Answer: D

Diff: 0 Type: BI

Solve the problem.

101) The accompanying figure shows the graph of $y = x^2$ shifted to a new position. Write the equation for the new graph.

101) _____



A) $y = x^2 + 2$

B) $y = x^2 - 2$

C) $y = (x - 2)^2$

D) $y = (x + 2)^2$

Answer: C

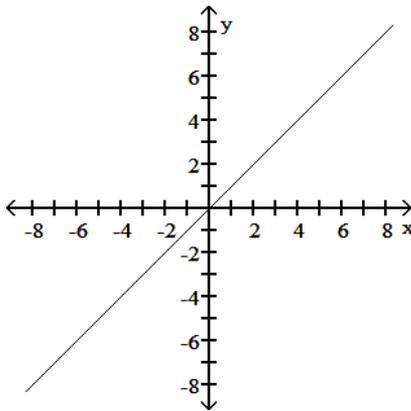
Diff: 0 Type: BI

Choose the graph that matches the function.

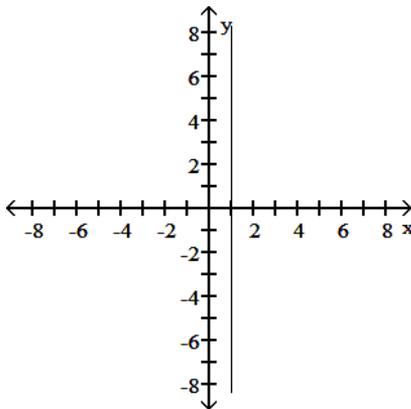
102) $f(x) = 1$

102) _____

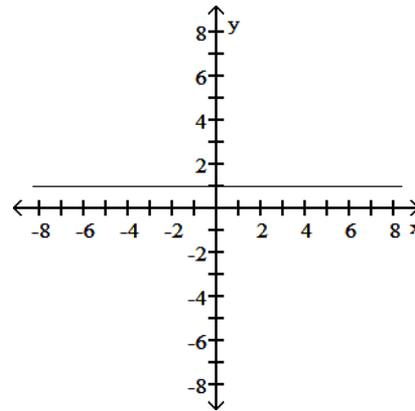
A)



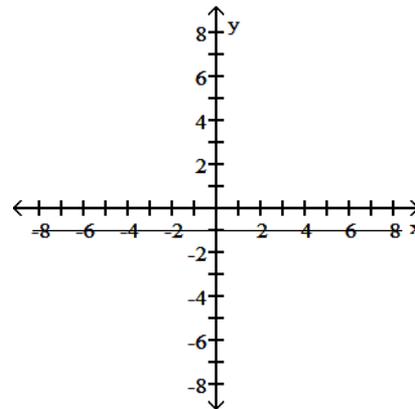
C)



B)



D)



Answer: B

Diff: 0 Type: MC

Evaluate the expressing using a unit circle or state that the quantity is undefined. All angles are in radians.

103) $\cot(-\pi)$ A) -1 B) 0 C) 1 D) Undefined 103) _____

Answer: D

Diff: 0 Type: BI

104) $\tan\left(-\frac{3\pi}{2}\right)$ A) 0 B) 1 C) -1 D) Undefined 104) _____

Answer: D

Diff: 0 Type: BI

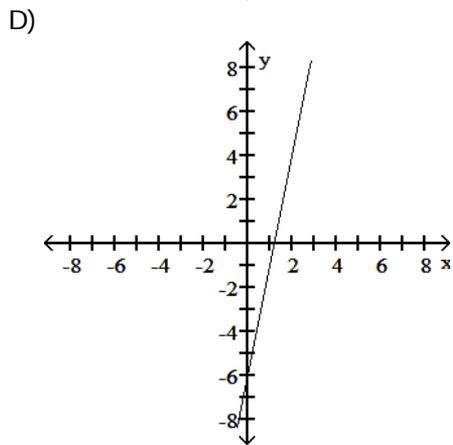
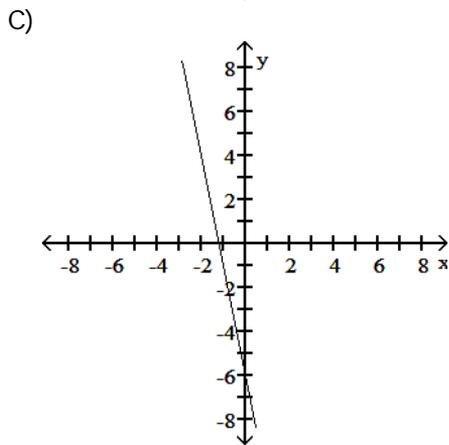
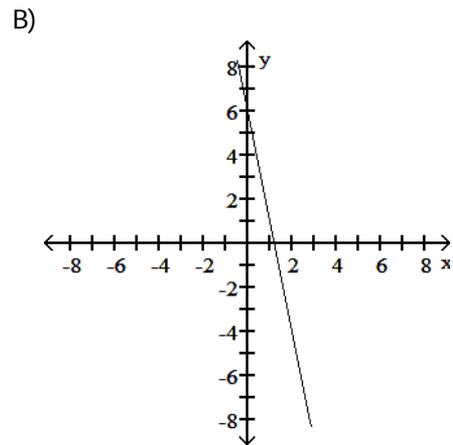
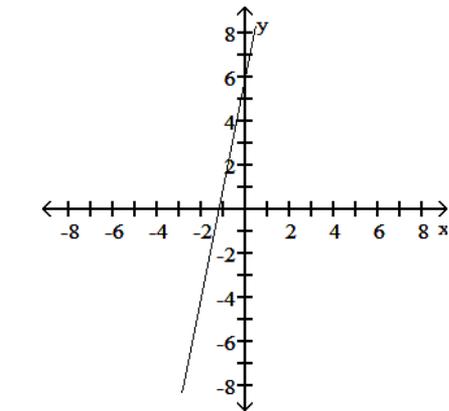
105) $\tan\left(\frac{5\pi}{3}\right)$ A) $\frac{\sqrt{3}}{2}$ B) $-\frac{\sqrt{3}}{3}$ C) $-\sqrt{3}$ D) $\sqrt{3}$ 105) _____

Answer: C

Diff: 0 Type: BI

Choose the graph that matches the function.

106) $f(x) = 5x + 6$ A) _____ B) _____ 106) _____



Answer: A

Diff: 0 Type: MC

Solve the problem.

107) If $f(x) = 4x^2 + 3x + 7$ and $g(x) = 3x - 4$, find $g(f(x))$.

A) $4x^2 + 9x + 17$

B) $4x^2 + 3x + 3$

C) $12x^2 + 9x + 17$

D) $12x^2 + 9x + 25$

107) _____

Answer: C

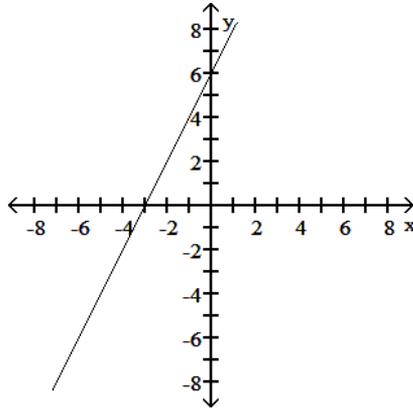
Diff: 0 Type: BI

Choose the graph that matches the function.

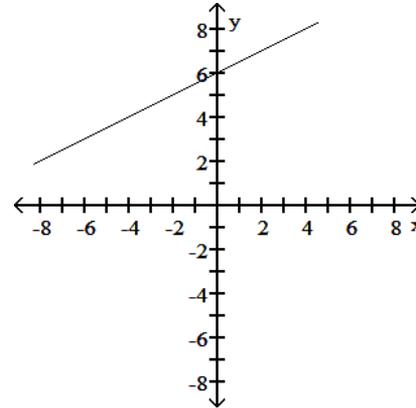
108) $f(x) = -\frac{1}{2}x + 6$

108) _____

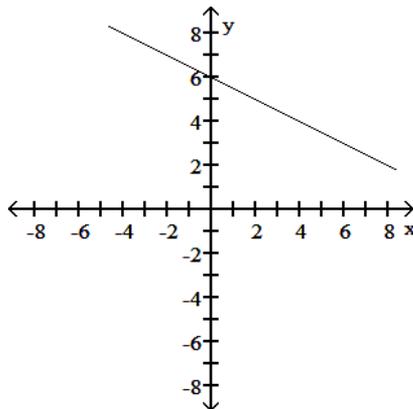
A)



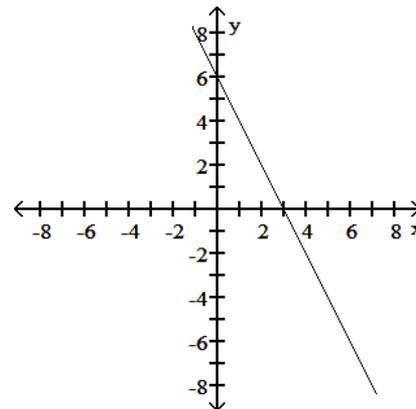
B)



C)



D)

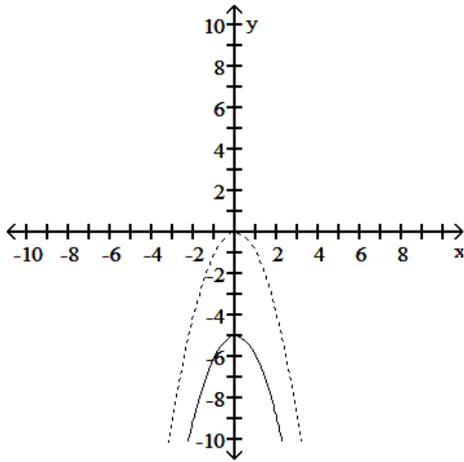


Answer: C

Diff: 0 Type: MC

Solve the problem.

- 109) The accompanying figure shows the graph of $y = -x^2$ shifted to a new position. Write the equation for the new graph. 109) _____



- A) $y = -(x + 5)^2$ B) $y = -(x - 5)^2$ C) $y = -x^2 + 5$ D) $y = -x^2 - 5$

Answer: D

Diff: 0 Type: BI

Evaluate the requested trigonometric function using the information given.

- 110) $\csc \theta = -\frac{5}{2}$; $3\pi/2 < \theta < 2\pi$ 110) _____

Find $\cos \theta$.

- A) $-\frac{2}{5}$ B) $-\frac{\sqrt{21}}{2}$ C) $\frac{2\sqrt{21}}{21}$ D) $\frac{\sqrt{21}}{5}$

Answer: D

Diff: 0 Type: BI

Evaluate the expression using a unit circle or state that the quantity is undefined. All angles are in radians.

- 111) $\tan\left(\frac{\pi}{6}\right)$ 111) _____

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

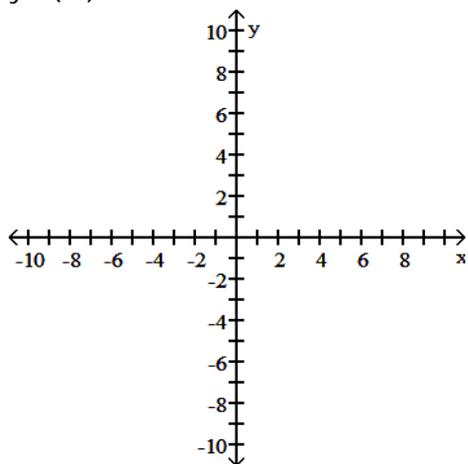
Answer: B

Diff: 0 Type: BI

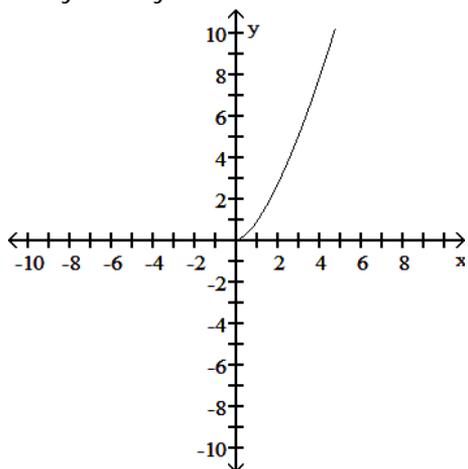
Graph the function. Determine the symmetry, if any, of the function.

112) $y = (-x)^{3/2}$

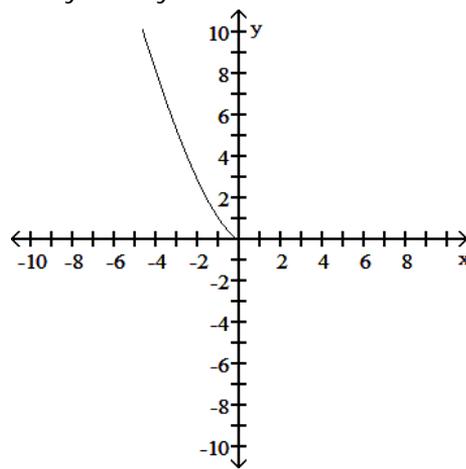
112) _____



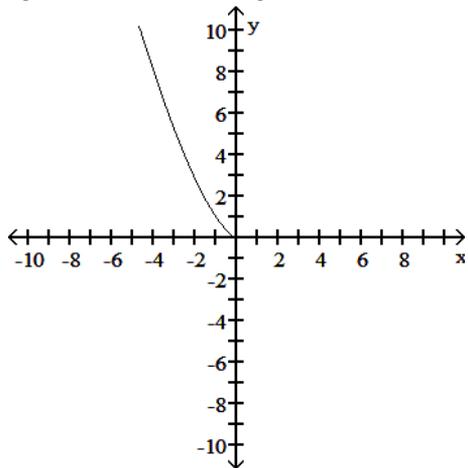
A) No symmetry



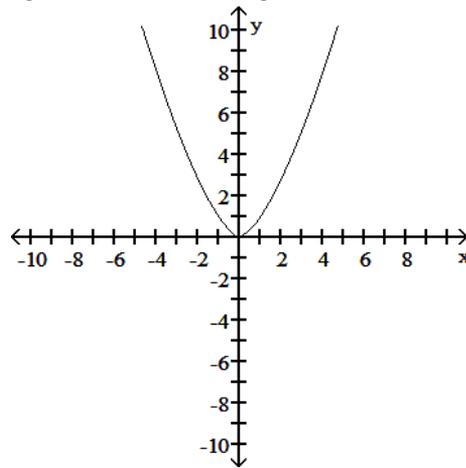
B) No symmetry



C) Symmetric about the y-axis



D) Symmetric about the y-axis



Answer: B
 Diff: 0 Type: BI

Evaluate the requested trigonometric function using the information given.

113) $\sec \theta = \frac{9}{4}$; $3\pi/2 < \theta < 2\pi$

113) _____

Find $\tan \theta$.

A) $-\frac{\sqrt{65}}{4}$

B) $-\frac{\sqrt{65}}{9}$

C) $-\sqrt{65}$

D) $-\frac{9}{4}$

Answer: A

Diff: 0 Type: BI

114) $\sin \theta = -\frac{2}{3}$; $3\pi/2 < \theta < 2\pi$

114) _____

Find $\csc \theta$.

A) $\frac{3\sqrt{7}}{7}$

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

C) $-\frac{\sqrt{7}}{9}$

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

Answer: B

Diff: 0 Type: BI

Evaluate the expressing using a unit circle or state that the quantity is undefined. All angles are in radians.

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

115) _____

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

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

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

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

Answer: C

Diff: 0 Type: BI

Find the domain and range of the function.

116) $g(z) = \sqrt{16 - z^2}$

116) _____

A) D: $[0, \infty)$, R: $(-\infty, \infty)$

B) D: $[-4, 4]$, R: $[0, 4]$

C) D: $(-\infty, \infty)$, R: $(0, 4)$

D) D: $(-4, 4)$, R: $(-4, 4)$

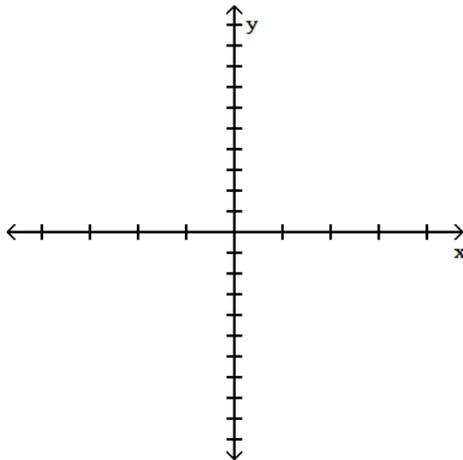
Answer: B

Diff: 0 Type: BI

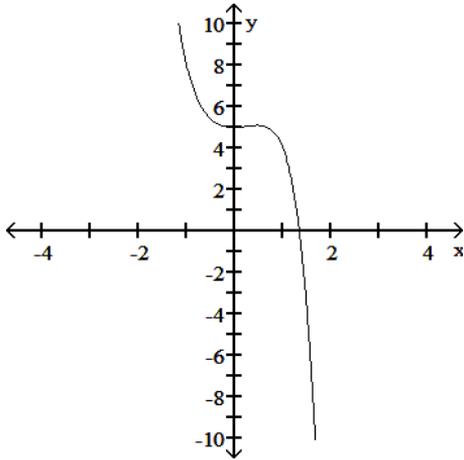
Determine an appropriate viewing window for the given function and use it to display its graph.

117) $f(x) = x^5 - x^3 + x^2 + 5$

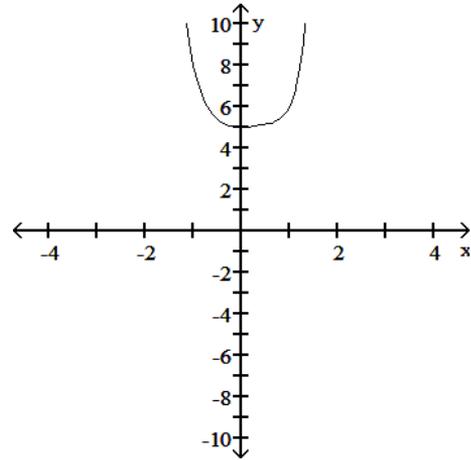
117) _____



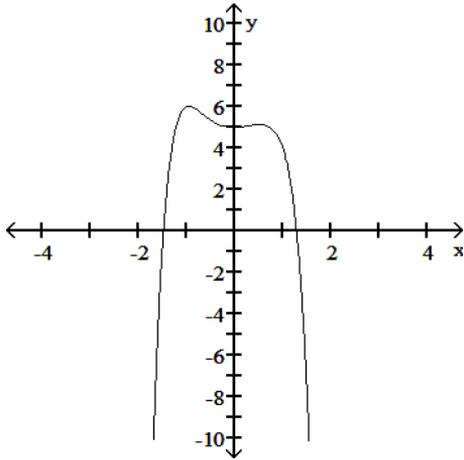
A)



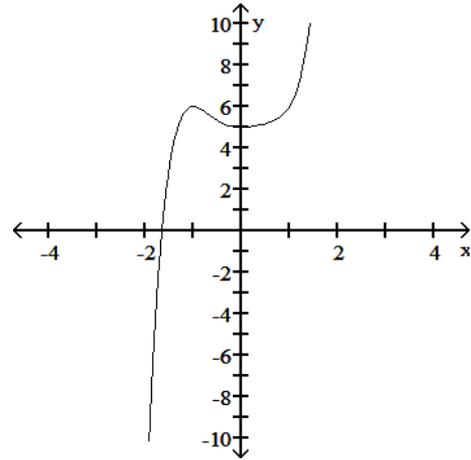
B)



C)



D)



Answer: D

Diff: 0 Type: BI

Solve the problem.

118) Midtown Delivery Service delivers packages which cost \$1.20 per package to deliver. The fixed cost to run the delivery truck is \$92 per day. If the company charges \$5.20 per package, how many packages must be delivered daily to break even (zero profit)? 118) _____

- A) 23 packages B) 14 packages C) 76 packages D) 15 packages

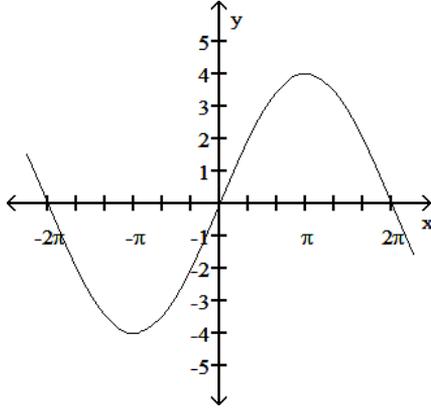
Answer: A

Diff: 0 Type: BI

Find an equation for the graph.

119)

119) _____



A) $y = 2 \sin\left(\frac{1}{4}x\right)$

B) $y = 2 \sin(4x)$

C) $y = 4 \sin\left(\frac{1}{2}x\right)$

D) $y = 4 \sin(2x)$

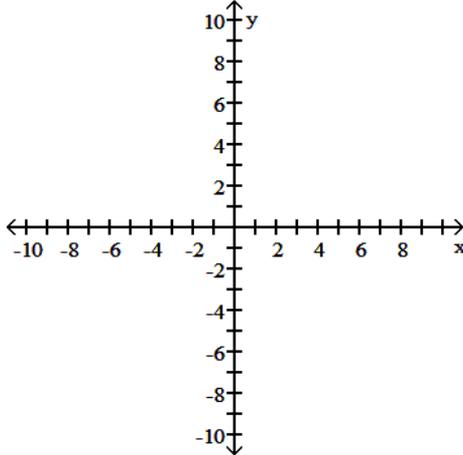
Answer: C

Diff: 0 Type: BI

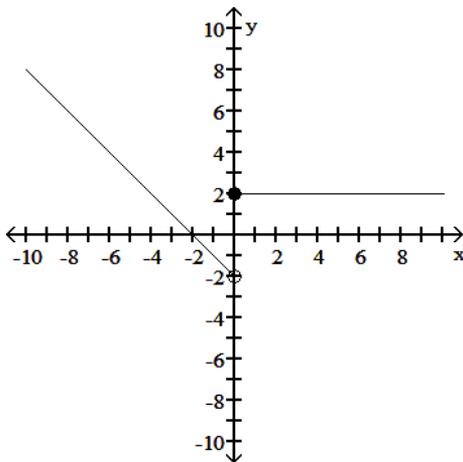
Graph the function.

120) $G(x) = \begin{cases} |x| + 2, & x < 0 \\ 2, & x \geq 0 \end{cases}$

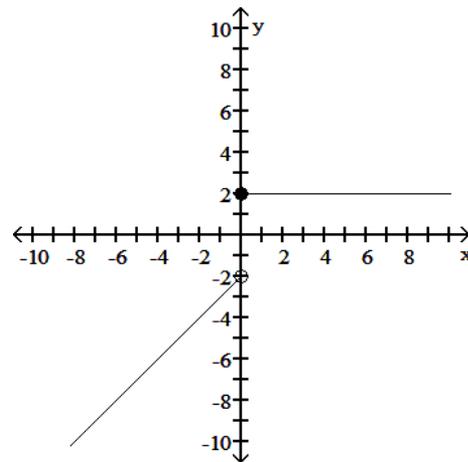
120) _____

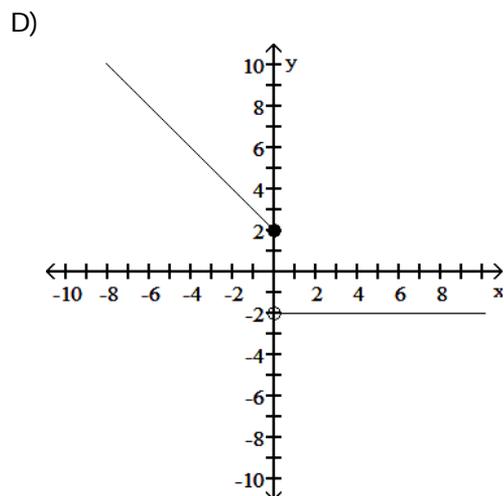
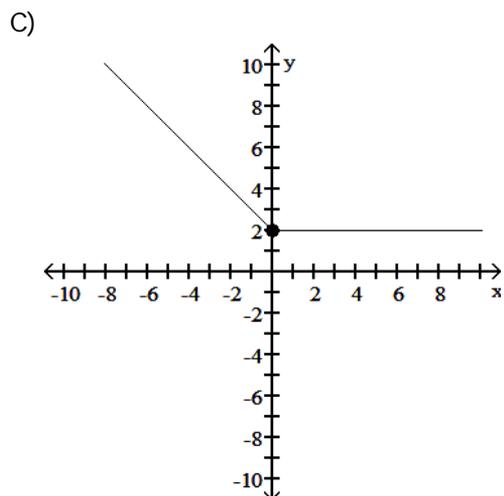


A)



B)





Answer: C
 Diff: 0 Type: BI

Find the domain and range of the function.

121) $F(t) = \frac{5}{7\sqrt{t}}$

- A) D: $(-\infty, \infty)$, R: $(-\infty, \infty)$
- C) D: $[0, \infty)$, R: $[0, \infty)$

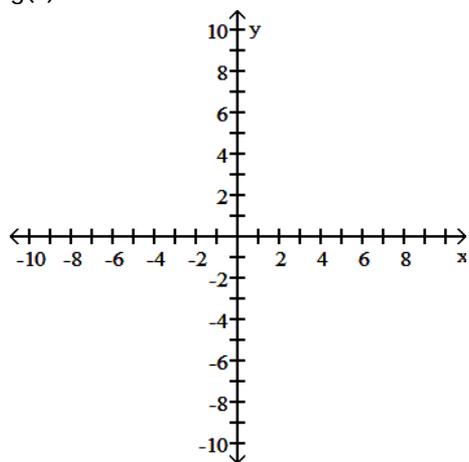
- B) D: $(-\infty, 0)$, R: $(-\infty, 0)$
- D) D: $(0, \infty)$, R: $(0, \infty)$

Answer: D
 Diff: 0 Type: BI

121) _____

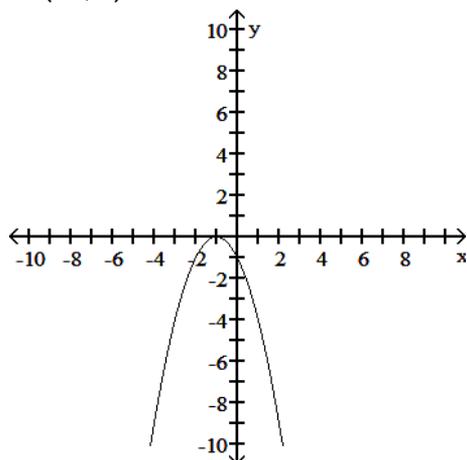
Find the domain and graph the function.

122) $g(x) = 1 - 2x - x^2$

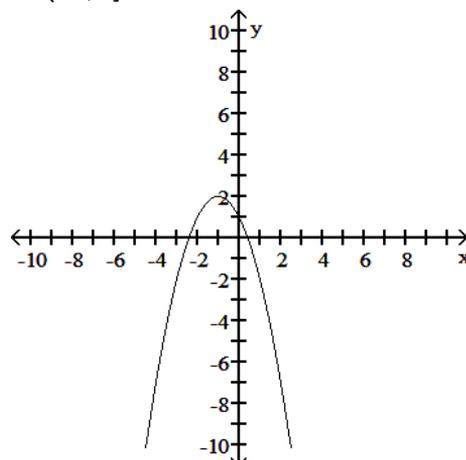


122) _____

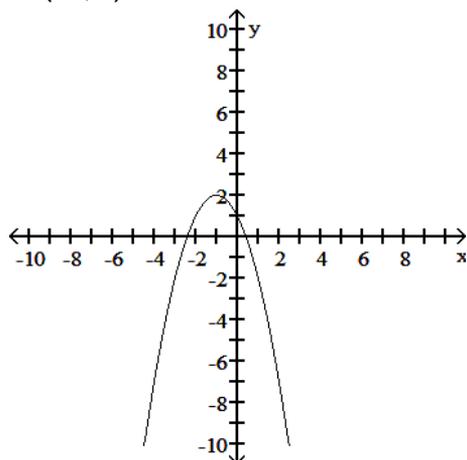
A) D: $(-\infty, \infty)$



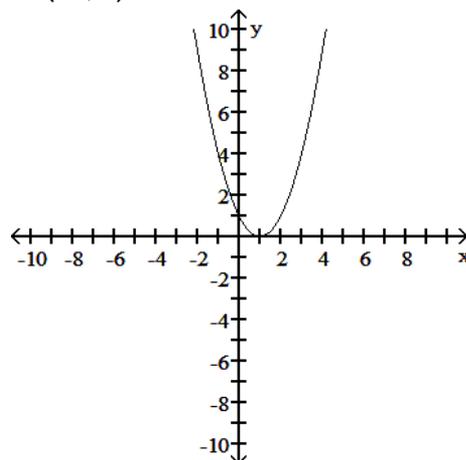
B) D: $(-\infty, 2]$



C) D: $(-\infty, \infty)$



D) D: $(-\infty, \infty)$



Answer: C

Diff: 0 Type: BI

Express the given function as a composite of functions f and g such that $y = f(g(x))$.

123) $y = \frac{7}{x^2} + 3$

123) _____

A) $f(x) = x, g(x) = \frac{7}{x} + 3$

B) $f(x) = x + 3, g(x) = \frac{7}{x^2}$

C) $f(x) = \frac{7}{x^2}, g(x) = 3$

D) $f(x) = \frac{1}{x}, g(x) = \frac{7}{x} + 3$

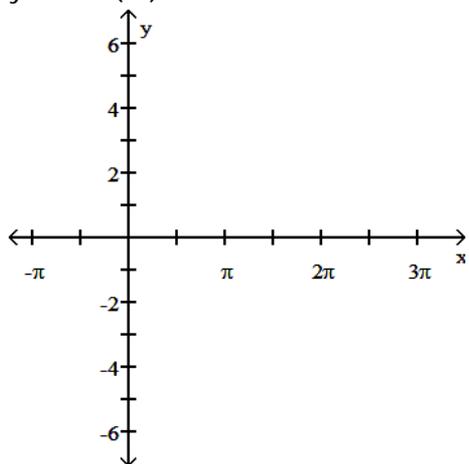
Answer: B

Diff: 0 Type: BI

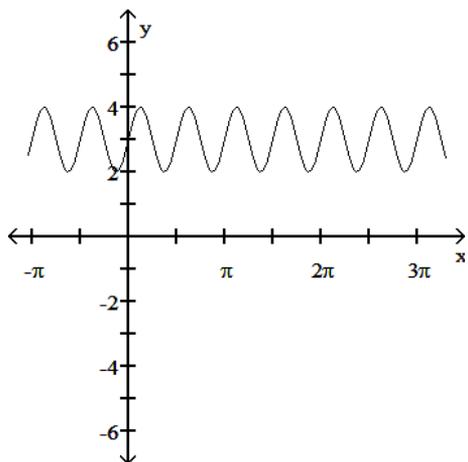
Graph the function.

124) $y = 4 \sin(3x)$

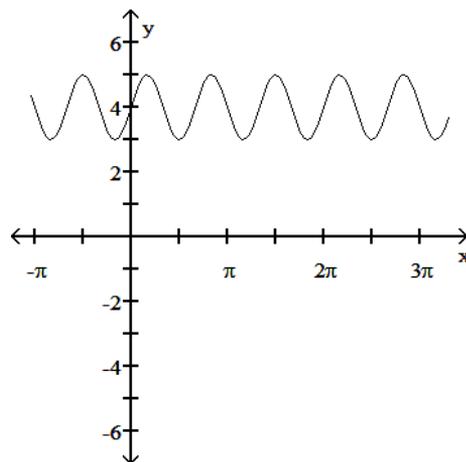
124) _____



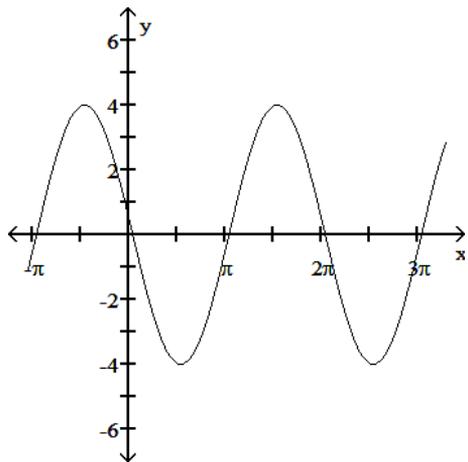
A)



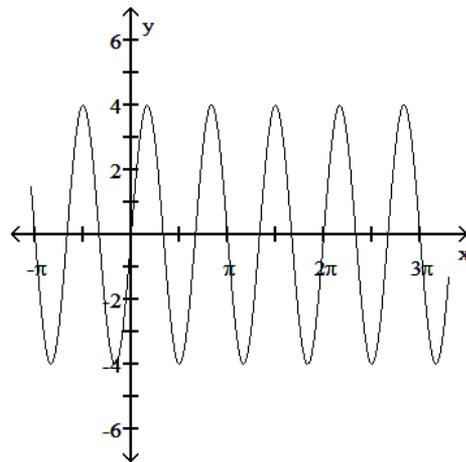
B)



C)



D)



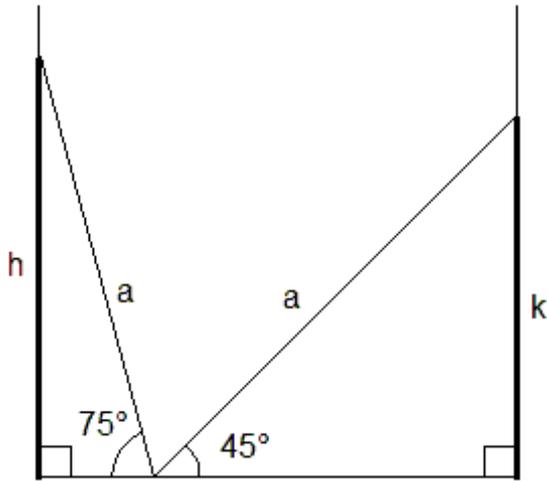
Answer: D

Diff: 0 Type: BI

Solve the problem.

125) Two ladders of length a lean against opposite walls of an alley with their feet touching. One ladder extends h feet up the wall and makes a 75° angle with the ground. The other ladder extends k feet up the opposite wall and makes a 45° angle with the ground. Find the width of the alley in terms of h . Assume that the ground is horizontal and perpendicular to both walls.

125) _____



A) $(3 + 2\sqrt{3})h$

B) h

C) $(4 - 2\sqrt{3})h$

D) $\left(\frac{3}{2} + \frac{\sqrt{3}}{2}\right)h$

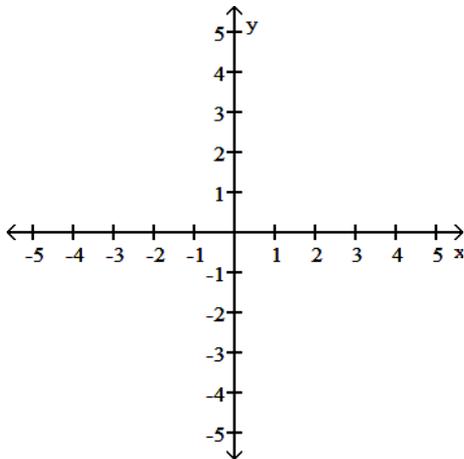
Answer: B

Diff: 0 Type: BI

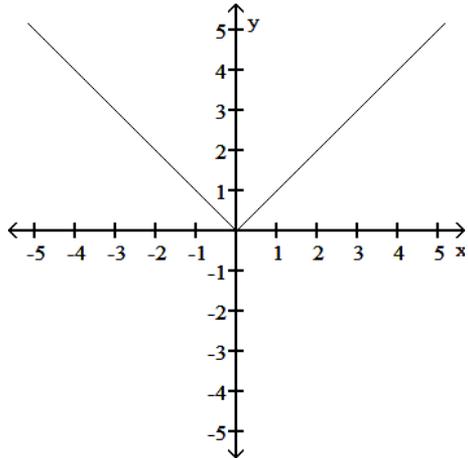
Graph the function. Determine the symmetry, if any, of the function.

126) $y = -|x|$

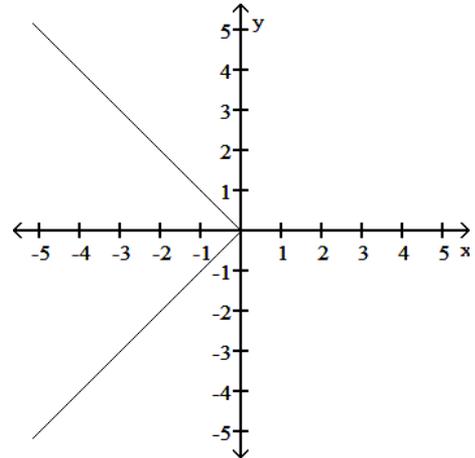
126) _____



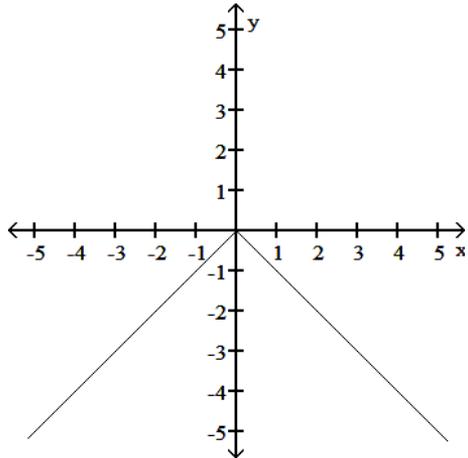
A) Symmetric about the y-axis



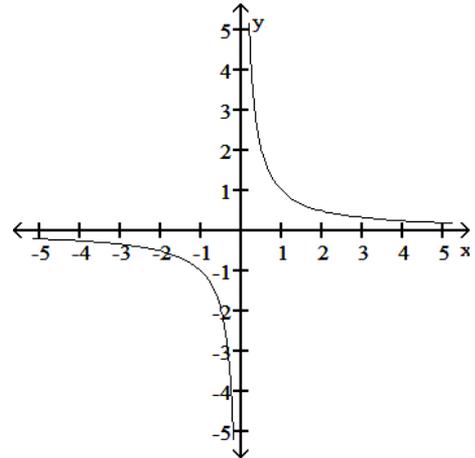
B) Symmetric about the x-axis



C) Symmetric about the y-axis



D) Symmetric about the origin



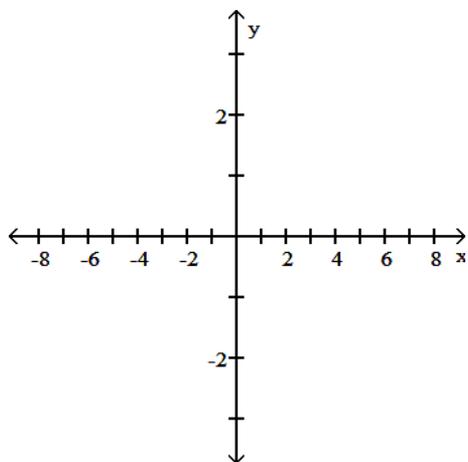
Answer: C

Diff: 0 Type: BI

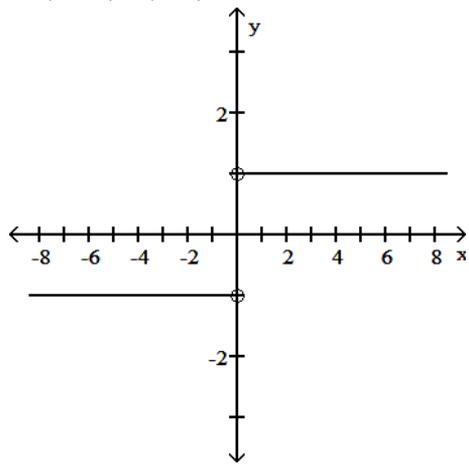
Find the domain and graph the function.

127) $F(t) = \frac{|t+2|}{t+2}$

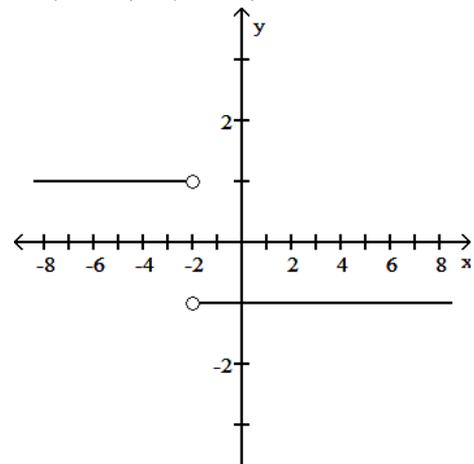
127) _____



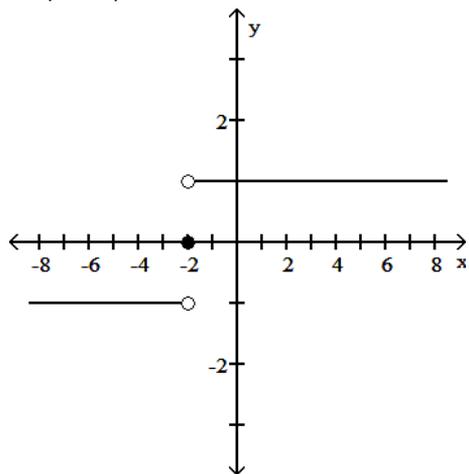
A) $D: (-\infty, 0) \cup (0, \infty)$



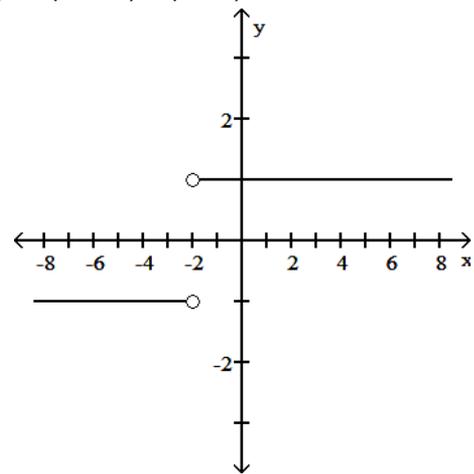
B) $D: (-\infty, -2) \cup (-2, \infty)$



C) $D: (-\infty, \infty)$



D) $D: (-\infty, -2) \cup (-2, \infty)$



Answer: D

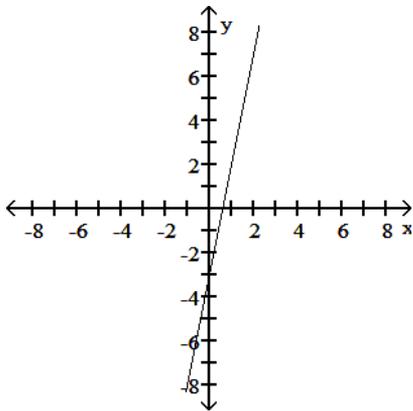
Diff: 0 Type: BI

Choose the graph that matches the function.

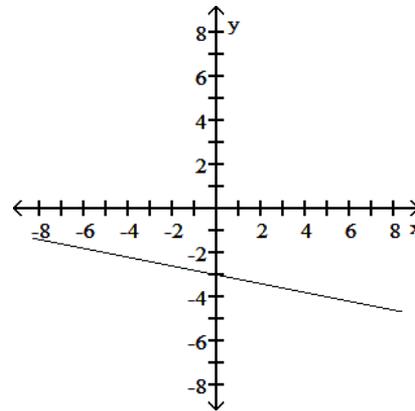
128) $f(x) = -5x - 3$

128) _____

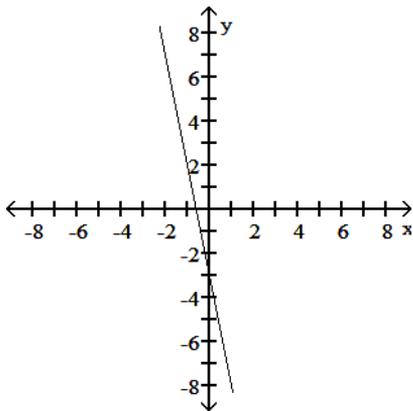
A)



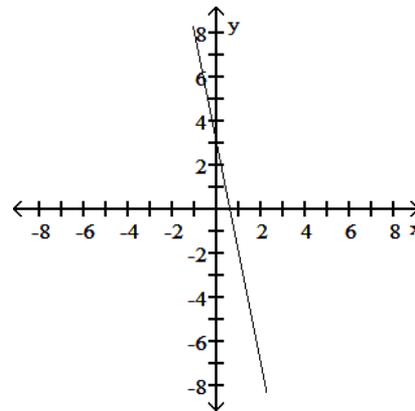
B)



C)



D)



Answer: C

Diff: 0 Type: MC

Evaluate the expression using a unit circle or state that the quantity is undefined. All angles are in radians.

129) $\sin\left(\frac{5\pi}{4}\right)$

129) _____

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

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

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

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

Answer: D

Diff: 0 Type: BI

Solve the problem.

130) If $f(x) = \frac{x-3}{8}$ and $g(x) = 8x+3$, find $g(f(x))$.

130) _____

A) $-\frac{3}{8}$

B) $8x+21$

C) $x+6$

D) x

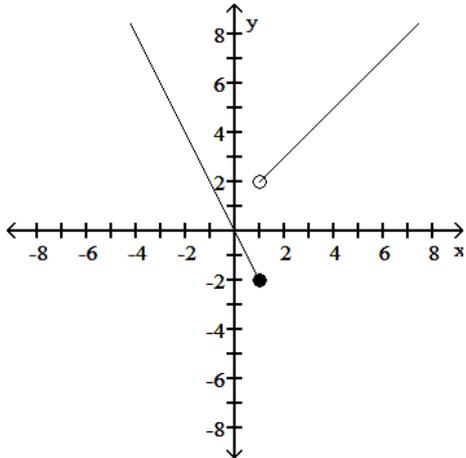
Answer: D

Diff: 0 Type: BI

Find a formula for the function graphed.

131)

131) _____



A) $f(x) = \begin{cases} x, & x \leq 1 \\ 2x + 1, & x > 1 \end{cases}$

B) $f(x) = \begin{cases} 2x, & x \leq 1 \\ x + 1, & x > 1 \end{cases}$

C) $f(x) = \begin{cases} -2x, & x \leq 1 \\ x + 2, & x > 1 \end{cases}$

D) $f(x) = \begin{cases} -2x, & x \leq 1 \\ x + 1, & x > 1 \end{cases}$

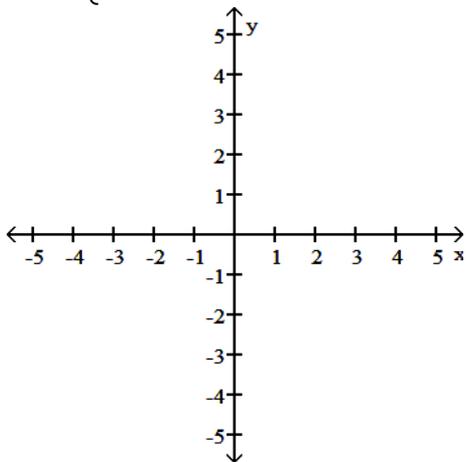
Answer: D

Diff: 0 Type: BI

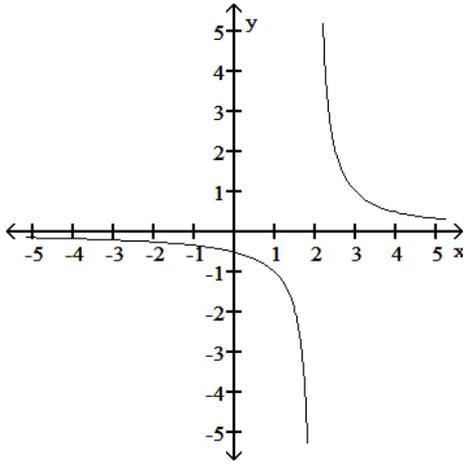
Graph the function.

132) $g(x) = \begin{cases} \frac{1}{x+2}, & x < -2 \\ x, & x \geq -2 \end{cases}$

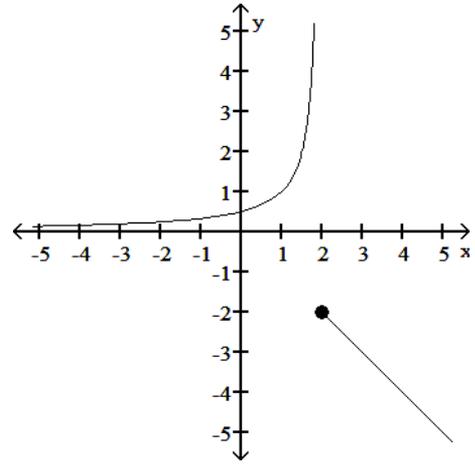
132) _____



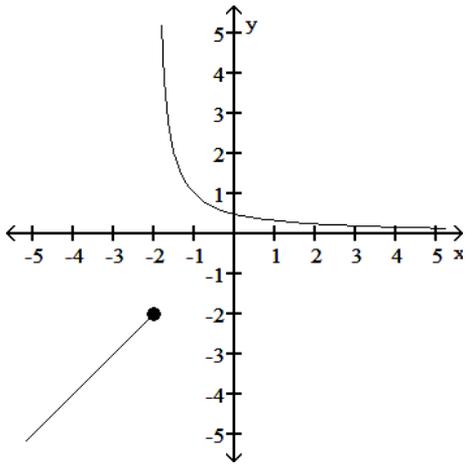
A)



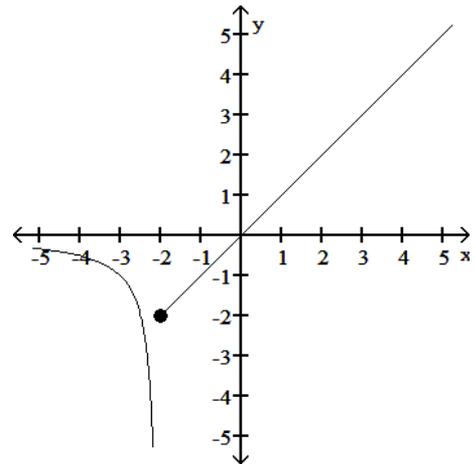
B)



C)



D)



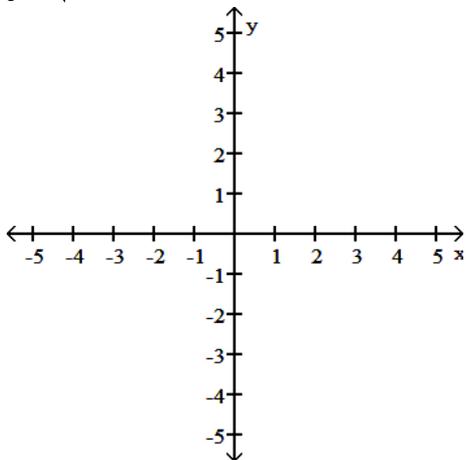
Answer: D

Diff: 0 Type: BI

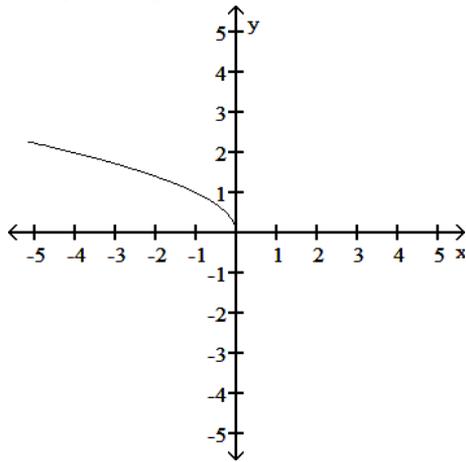
Graph the function. Determine the symmetry, if any, of the function.

133) $y = \sqrt{-x}$

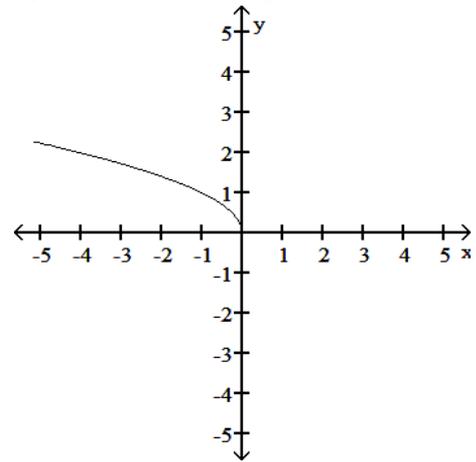
133) _____



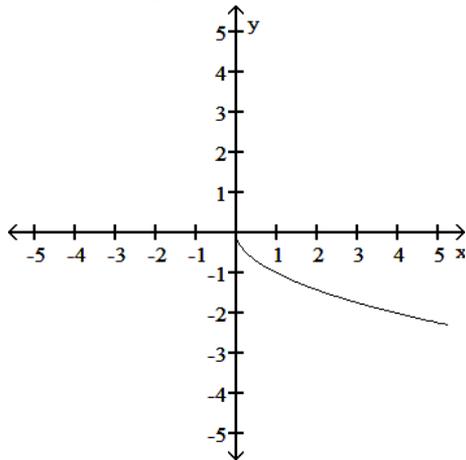
A) No symmetry



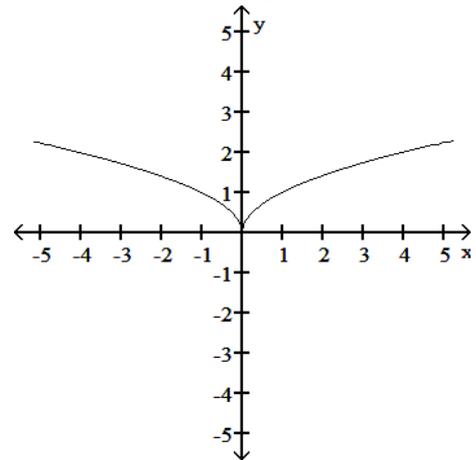
B) Symmetric about the y-axis



C) No symmetry



D) Symmetric about the y-axis



Answer: A

Diff: 0 Type: BI

Solve the problem.

134) Let $f(x) = \sqrt{x - 6}$. Find a function $y = g(x)$ so that $(f \circ g)(x) = \sqrt{x^2 - 6}$.

A) $g(x) = x^2$

B) $g(x) = x^2 - 6$

C) $g(x) = 2x$

D) $g(x) = x^2 + 6$

134) _____

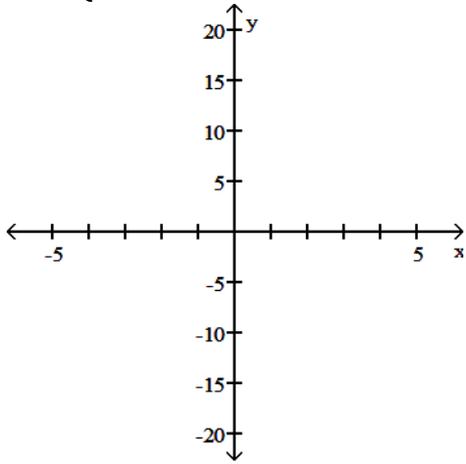
Answer: A

Diff: 0 Type: BI

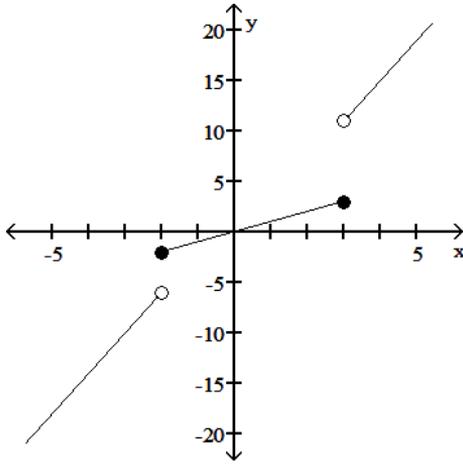
Graph the function.

$$135) f(x) = \begin{cases} 3x + 2, & x < -2 \\ x, & -2 \leq x \leq 3 \\ 2x - 1, & x > 3 \end{cases}$$

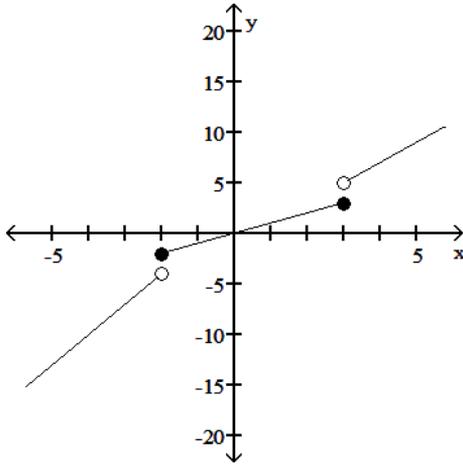
135) _____



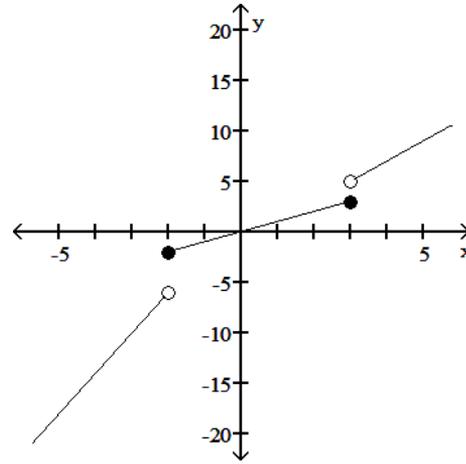
A)



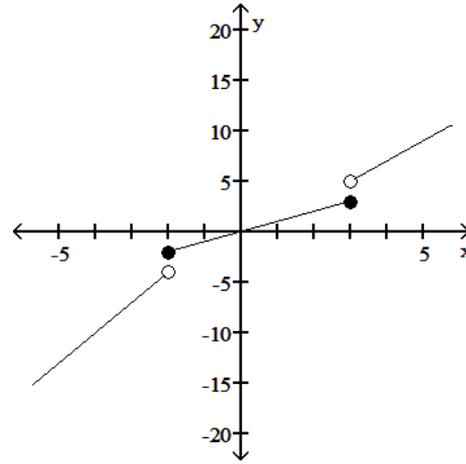
C)



B)



D)



Answer: C

Diff: 0 Type: BI

Solve the problem.

136) A lumber yard has fixed costs of \$6,922.00 a day and variable costs of \$1.00 per board-foot produced. The company gets \$3.00 per board-foot sold. How many board-feet must be produced daily to break even (zero profit)?

136) _____

- A) 1,730 board-feet
C) 6,922 board-feet

- B) 3,461 board-feet
D) 2,307 board-feet

Answer: B

Diff: 0 Type: BI

Solve for the angle θ , where $0 \leq \theta \leq 2\pi$

137) $\cos^2\theta = \frac{3}{4}$

137) _____

A) $\theta = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}$

B) $\theta = 0, \pi, 2\pi$

C) $\theta = \frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{5\pi}{3}$

D) $\theta = \frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4}$

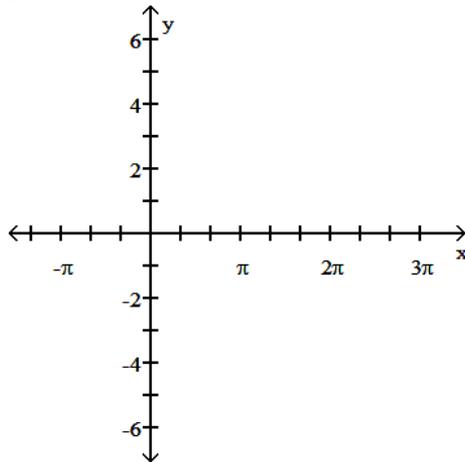
Answer: A

Diff: 0 Type: BI

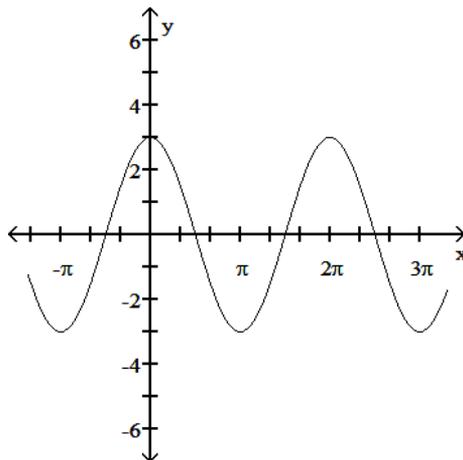
Graph the function.

138) $y = 3 \sin(\pi x)$

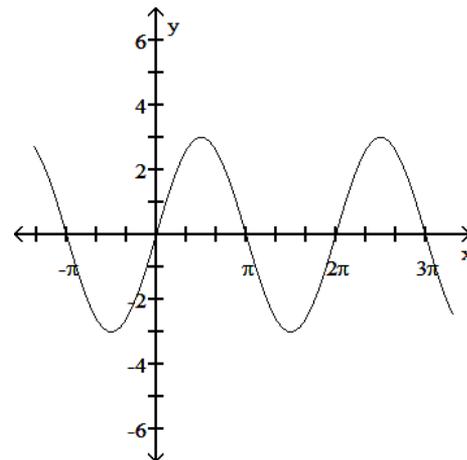
138) _____



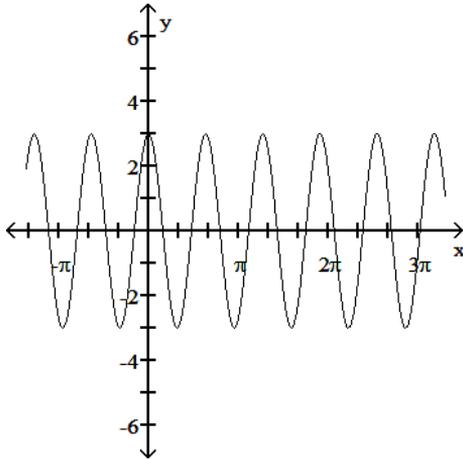
A)



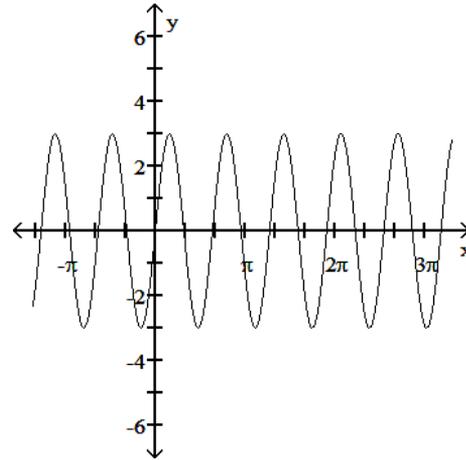
B)



C)



D)



Answer: D

Diff: 0 Type: BI

Solve the problem.

139) If $f(x) = 3x - 6$ and $g(x) = -7x^2 + 2x - 2$, find $g(f(8))$.

A) -92

B) -2234

C) -1308

D) -132

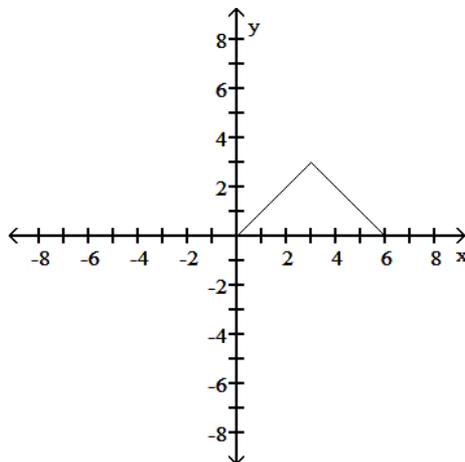
139) _____

Answer: B

Diff: 0 Type: BI

Find a formula for the function graphed.

140)



140) _____

A) $f(x) = \begin{cases} x, & 0 \leq x \leq 3 \\ 6 - x, & 3 < x \leq 6 \end{cases}$

B) $f(x) = \begin{cases} -x, & 0 \leq x \leq 3 \\ x + 6, & 3 < x \leq 6 \end{cases}$

C) $f(x) = \begin{cases} 6 - x, & 0 \leq x \leq 3 \\ x, & 3 < x \leq 6 \end{cases}$

D) $f(x) = \begin{cases} x + 6, & 0 \leq x \leq 3 \\ -x, & 3 < x \leq 6 \end{cases}$

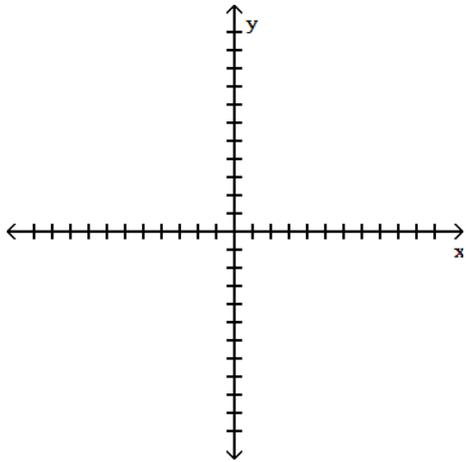
Answer: A

Diff: 0 Type: BI

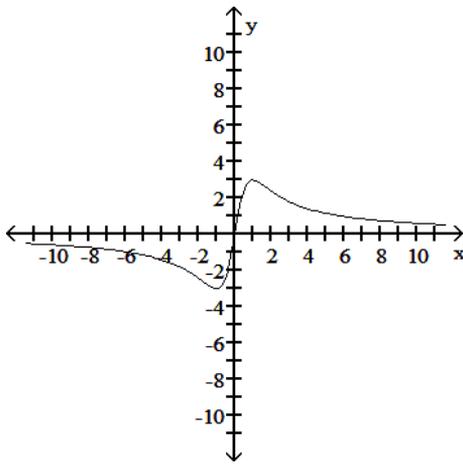
Determine an appropriate viewing window for the given function and use it to display its graph.

141) $f(x) = \frac{6x}{x^2 - 1}$

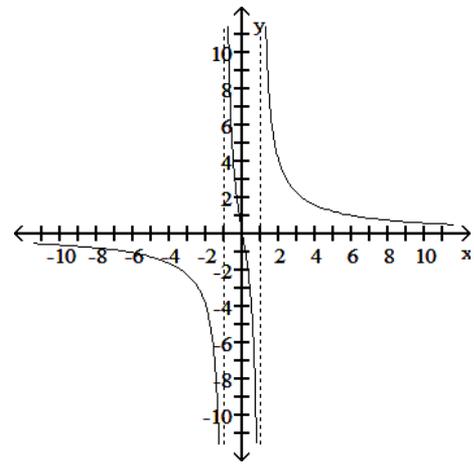
141) _____



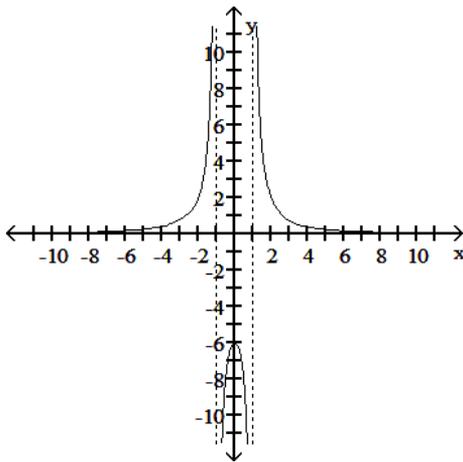
A)



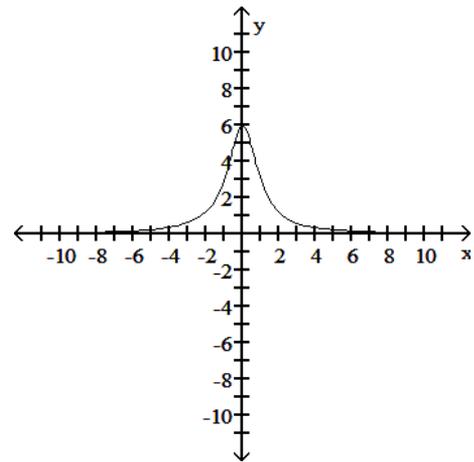
B)



C)



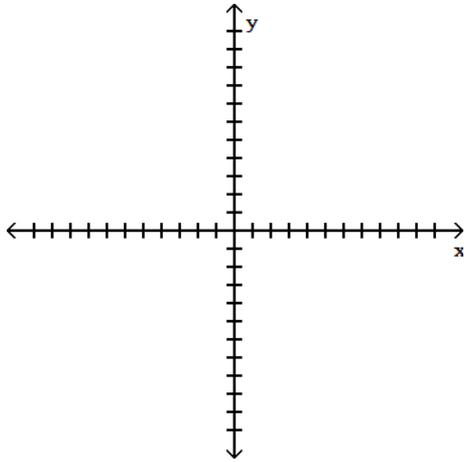
D)



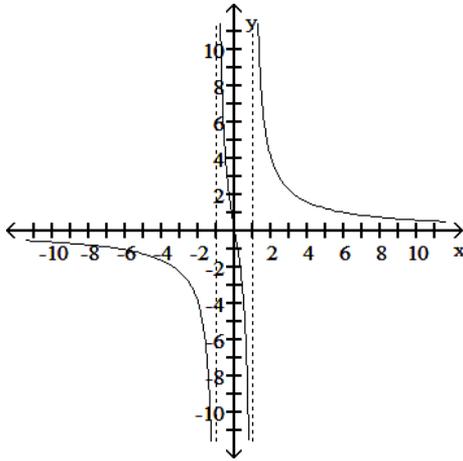
Answer: B
 Diff: 0 Type: BI

142) $f(x) = \frac{x^3}{x^2 - 1}$

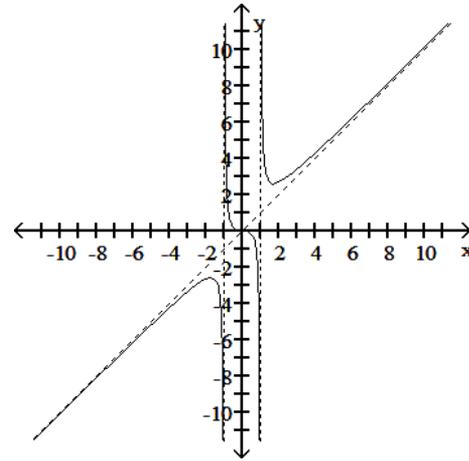
142) _____



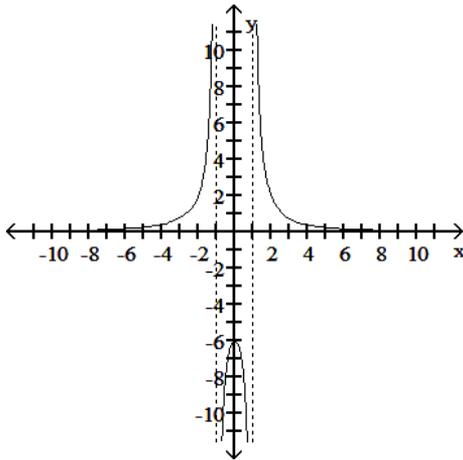
A)



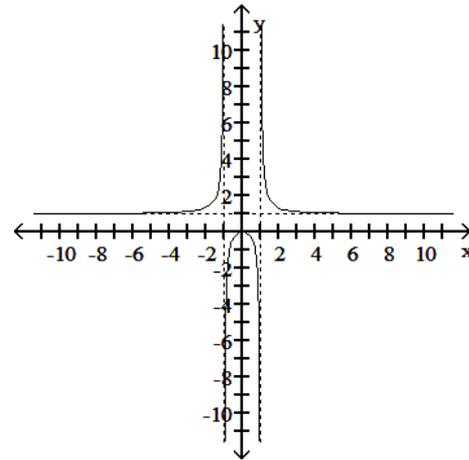
B)



C)



D)

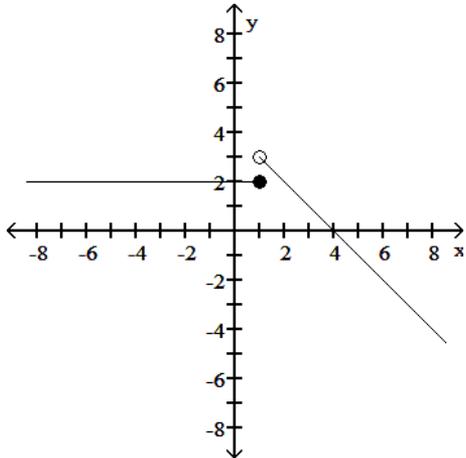


Answer: B
 Diff: 0 Type: BI

Find a formula for the function graphed.

143)

143) _____



A) $f(x) = \begin{cases} 2, & x < 1 \\ 4 - x, & x > 1 \end{cases}$

B) $f(x) = \begin{cases} 2, & x < 1 \\ 4 - x, & x > 1 \end{cases}$

C) $f(x) = \begin{cases} 2, & x < 0 \\ 4 - x, & x \geq 0 \end{cases}$

D) $f(x) = \begin{cases} 2, & x < 1 \\ x - 4, & x \geq 1 \end{cases}$

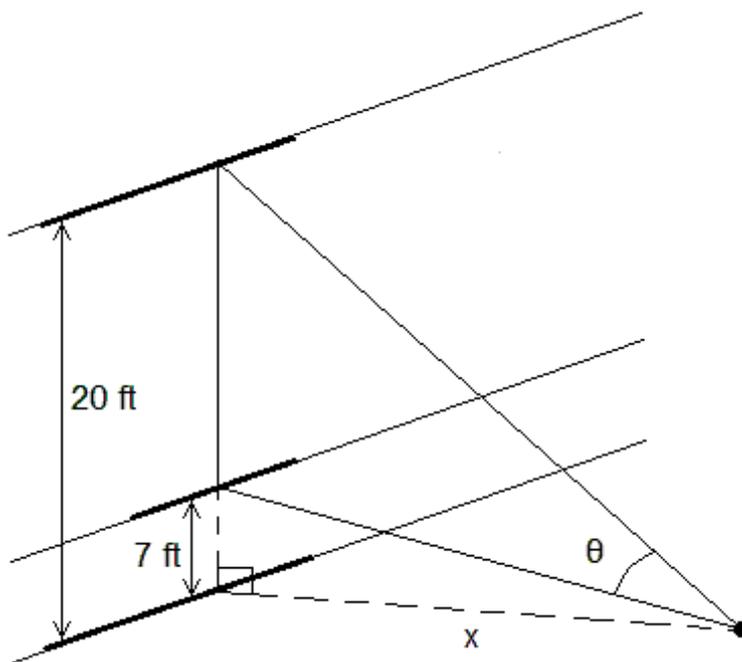
Answer: A

Diff: 0 Type: BI

Solve the problem.

144) An auditorium with a flat floor has a large flat-panel television on one wall. The lower edge of the television is 7 ft above the floor and the upper edge is 20 ft above the floor. Estimate the viewing angle θ at a distance $x = 20$ ft from the screen. Round to the nearest tenth of a degree.

144) _____



A) About 28.3°

B) About 25.7°

C) About 45.0°

D) About 19.3°

Answer: B

Diff: 0 Type: BI

Without graphing the function, determine its amplitude or period as requested.

145) $y = -2 \cos \frac{1}{3}x$ Find the period.

145) _____

- A) 6π B) $\frac{2\pi}{3}$ C) -2 D) $\frac{\pi}{3}$

Answer: A
Diff: 0 Type: BI

Express the given function as a composite of functions f and g such that $y = f(g(x))$.

146) $y = (-8x - 13)^6$

146) _____

- A) $f(x) = -8x^6, g(x) = x - 13$ B) $f(x) = (-8x)^6, g(x) = -13$
C) $f(x) = x^6, g(x) = -8x - 13$ D) $f(x) = -8x - 13, g(x) = x^6$

Answer: C
Diff: 0 Type: BI

Evaluate the requested trigonometric function using the information given.

147) $\csc \theta = -\frac{7}{4}; \pi < \theta < 3\pi/2$

147) _____

Find $\cot \theta$.

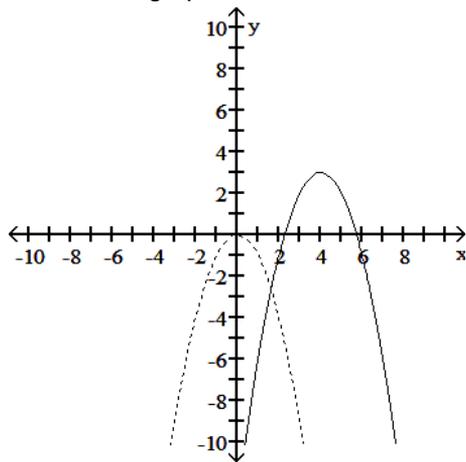
- A) $-\frac{\sqrt{33}}{7}$ B) $\frac{\sqrt{33}}{4}$ C) $-\frac{4\sqrt{33}}{33}$ D) $-\frac{7\sqrt{33}}{33}$

Answer: B
Diff: 0 Type: BI

Solve the problem.

148) The accompanying figure shows the graph of $y = -x^2$ shifted to a new position. Write the equation for the new graph.

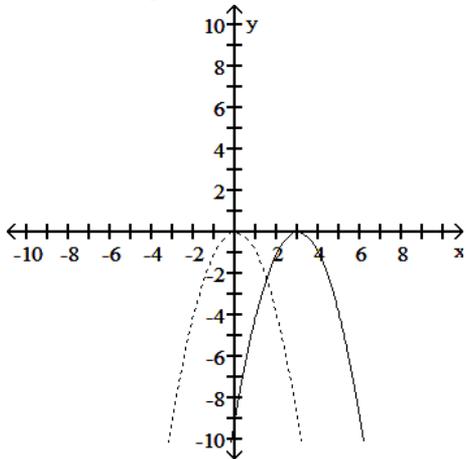
148) _____



- A) $y = -(x + 4)^2 + 3$ B) $y = -(x + 3)^2 + 4$ C) $y = -(x - 4)^2 + 3$ D) $y = -(x - 4)^2 - 3$

Answer: C
Diff: 0 Type: BI

149) The accompanying figure shows the graph of $y = -x^2$ shifted to a new position. Write the equation for the new graph. 149) _____



A) $y = -(x - 3)^2$

B) $y = -(x + 3)^2$

C) $y = -x^2 + 3$

D) $y = -x^2 - 3$

Answer: A

Diff: 0 Type: BI

Without graphing the function, determine its amplitude or period as requested.

150) $y = \frac{5}{6} \cos\left(-\frac{4\pi}{7}x\right)$ Find the period. 150) _____

A) $\frac{7}{2}$

B) $\frac{5\pi}{3}$

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

D) $\frac{8\pi}{7}$

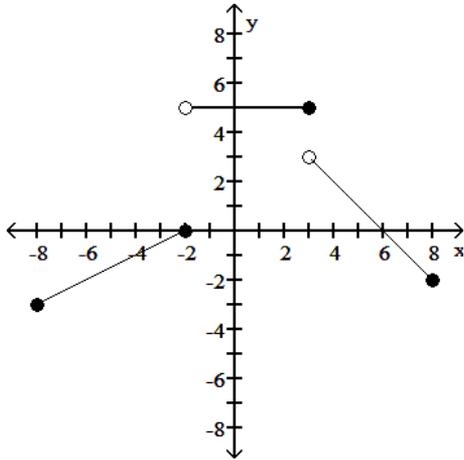
Answer: A

Diff: 0 Type: BI

Find a formula for the function graphed.

151)

151) _____



$$A) f(x) = \begin{cases} -\frac{1}{2}x + 1, & -8 \leq x \leq -2 \\ 5, & -2 < x \leq 3 \\ x - 6, & 3 < x \leq 8 \end{cases}$$

$$B) f(x) = \begin{cases} \frac{1}{2}x + 1, & -8 \leq x \leq -2 \\ 5, & -2 < x \leq 3 \\ 6 - x, & 3 < x \leq 8 \end{cases}$$

$$C) f(x) = \begin{cases} \frac{1}{2}x + 1, & -8 \leq x \leq -2 \\ 5, & -2 < x < 3 \\ 6 - x, & 3 \leq x \leq 8 \end{cases}$$

$$D) f(x) = \begin{cases} \frac{1}{2}x + 1, & -8 < x \leq -2 \\ 5, & -2 < x \leq 3 \\ 6 - x, & 3 < x < 8 \end{cases}$$

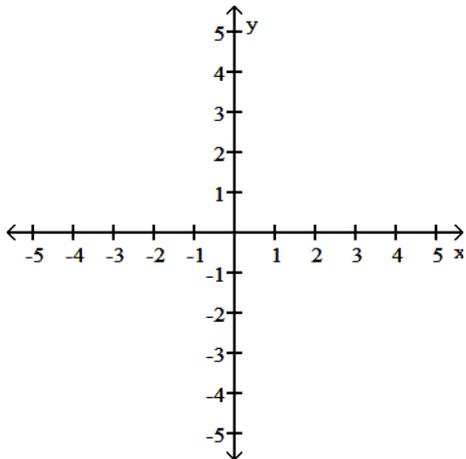
Answer: B

Diff: 0 Type: BI

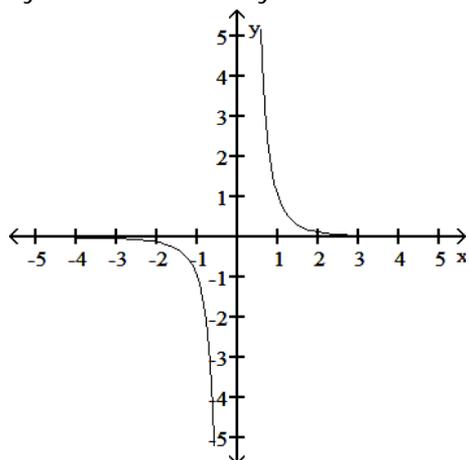
Graph the function. Determine the symmetry, if any, of the function.

$$152) y = \frac{1}{x^3}$$

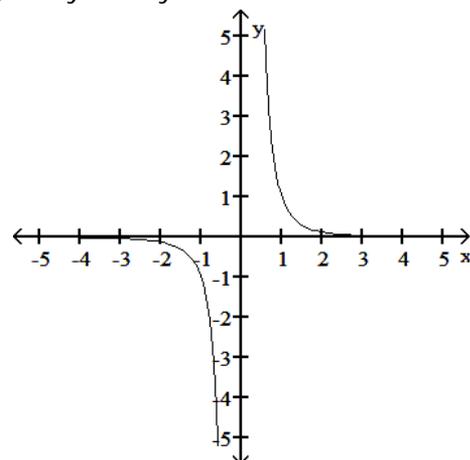
152) _____



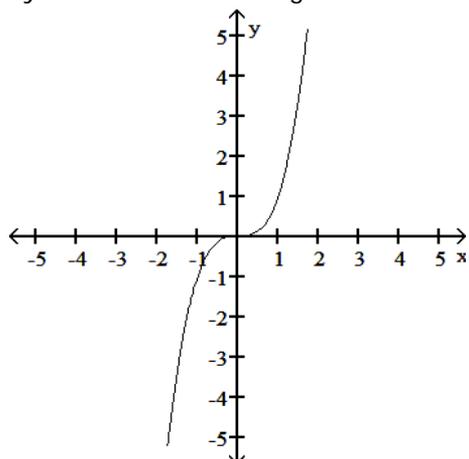
A) Symmetric about the y-axis



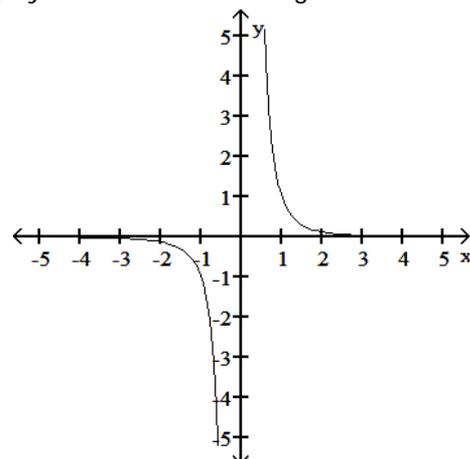
B) No symmetry



C) Symmetric about the origin



D) Symmetric about the origin

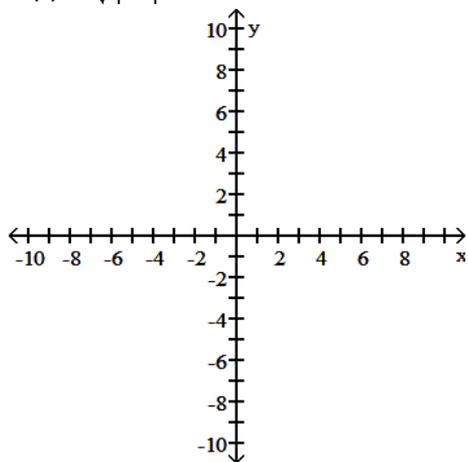


Answer: D

Diff: 0 Type: BI

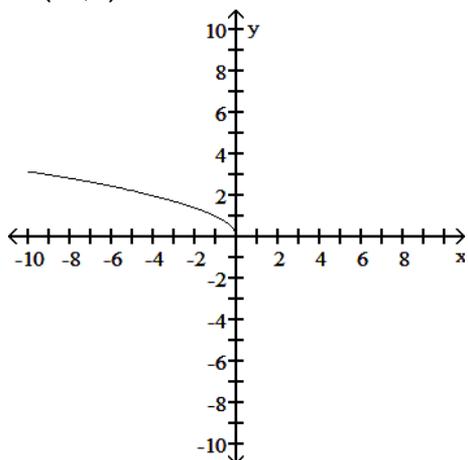
Find the domain and graph the function.

153) $G(x) = \sqrt{|x|}$

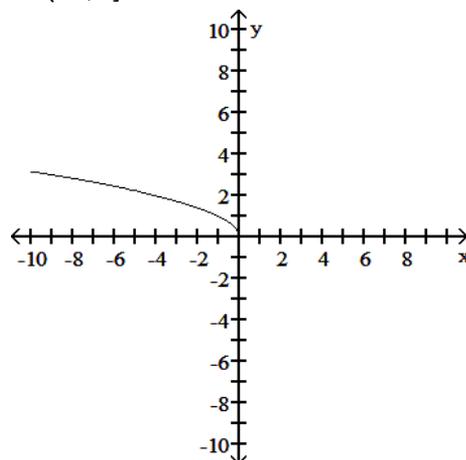


153) _____

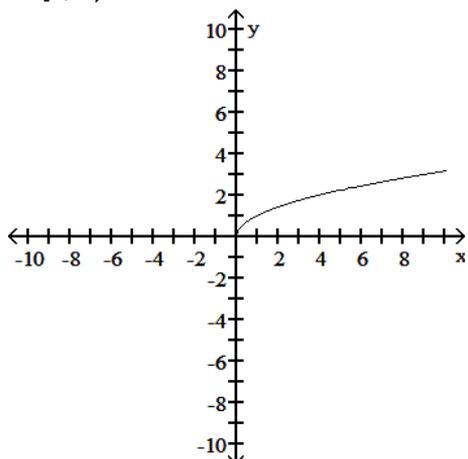
A) D: $(-\infty, 0)$



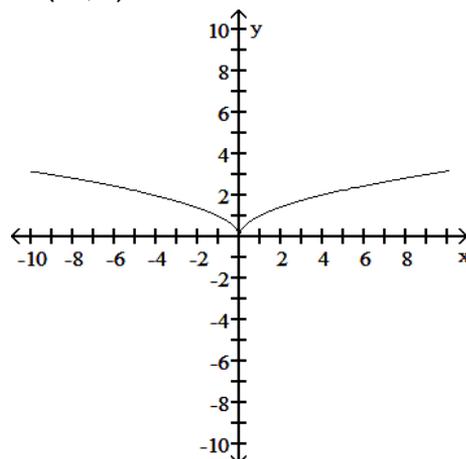
B) D: $(-\infty, 0]$



C) D: $[0, \infty)$



D) D: $(-\infty, \infty)$



Answer: D

Diff: 0 Type: BI

Find the domain and range of the function.

154) $f(x) = \frac{2}{6 + \sqrt{x}}$

154) _____

A) D: $[0, \infty)$, R: $\left[0, \frac{1}{3}\right]$

B) D: $(-\infty, \infty)$, R: $\left[0, \frac{1}{3}\right]$

C) D: $[0, \infty)$, R: $(-\infty, \infty)$

D) D: $(-\infty, 0]$, R: $(-\infty, 0]$

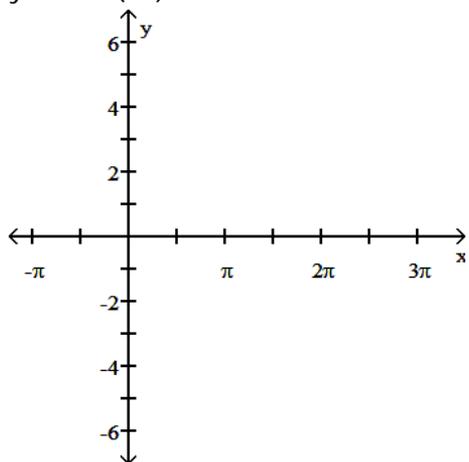
Answer: A

Diff: 0 Type: BI

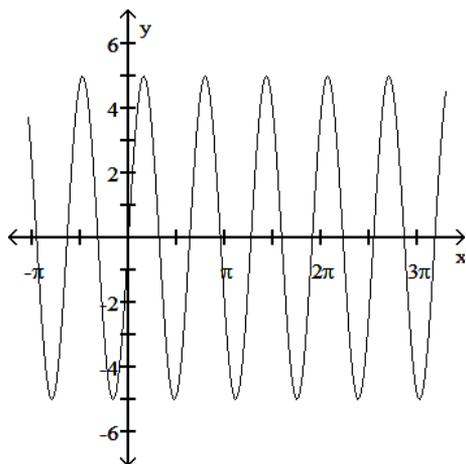
Graph the function.

155) $y = 5 \cos(\pi x)$

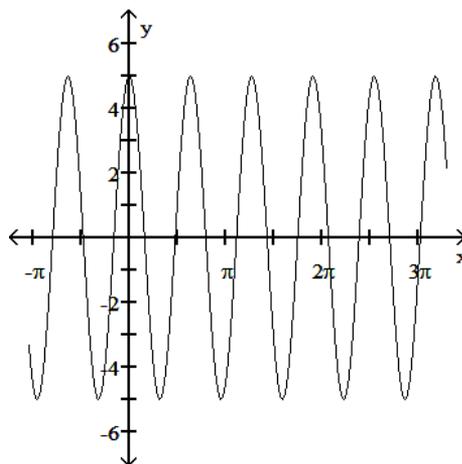
155) _____



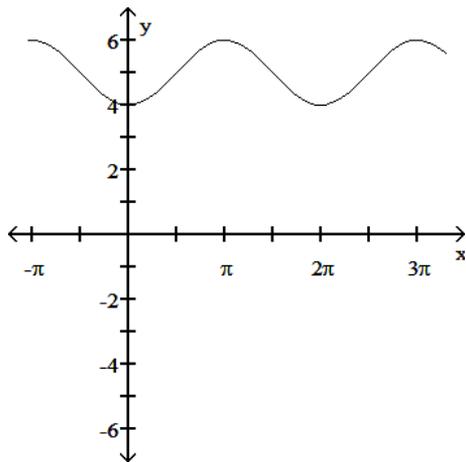
A)



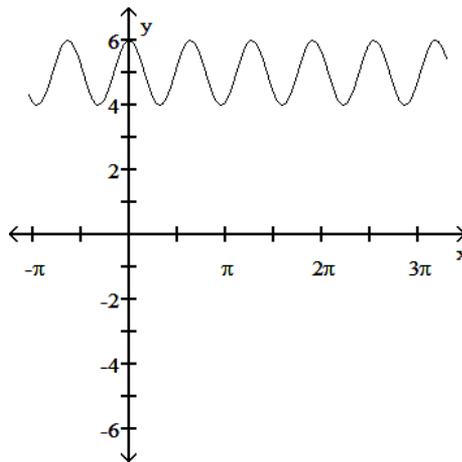
B)



C)



D)



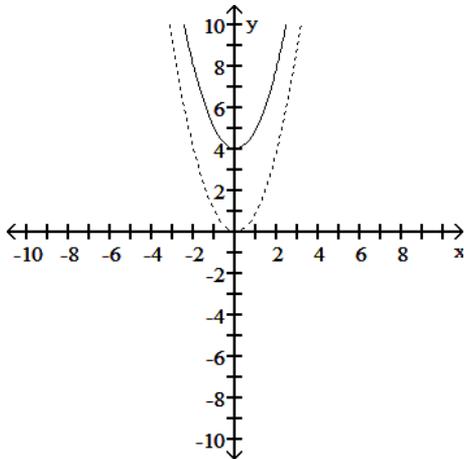
Answer: B

Diff: 0 Type: BI

Solve the problem.

156) The accompanying figure shows the graph of $y = x^2$ shifted to a new position. Write the equation for the new graph.

156) _____



A) $y = (x - 4)^2$

B) $y = (x + 4)^2$

C) $y = x^2 - 4$

D) $y = x^2 + 4$

Answer: D

Diff: 0 Type: BI

Evaluate the expressing using a unit circle or state that the quantity is undefined. All angles are in radians.

157) $\tan\left(\frac{\pi}{4}\right)$

157) _____

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

B) 1

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

D) $\sqrt{2}$

Answer: B

Diff: 0 Type: BI

Without graphing the function, determine its amplitude or period as requested.

158) $y = -5 \sin \frac{1}{2}x$ Find the amplitude.

158) _____

A) $\frac{5\pi}{2}$

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

C) 4π

D) 5

Answer: D

Diff: 0 Type: BI

Solve the problem.

159) If $f(x) = -6x - 6$ and $g(x) = 7x^2 + 4x - 9$, find $g(f(-4))$.

159) _____

A) 312

B) -528

C) 189

D) 2331

Answer: D

Diff: 0 Type: BI

Without graphing the function, determine its amplitude or period as requested.

160) $y = 5 \cos \frac{1}{4}x$ Find the amplitude.

160) _____

A) 8π

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

C) $\frac{\pi}{5}$

D) 5

Answer: D

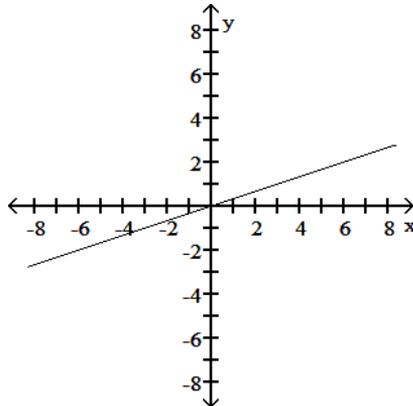
Diff: 0 Type: BI

Choose the graph that matches the function.

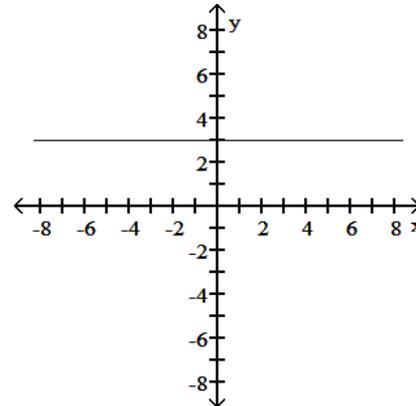
161) $f(x) = 3x$

161) _____

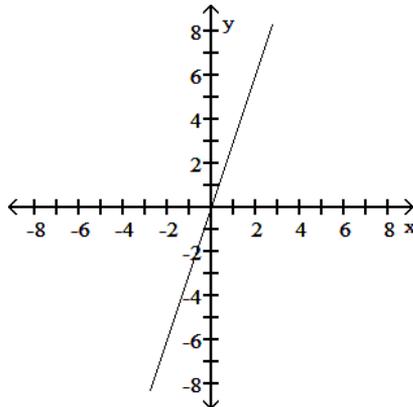
A)



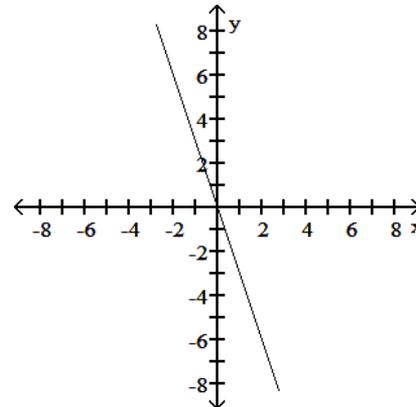
B)



C)



D)



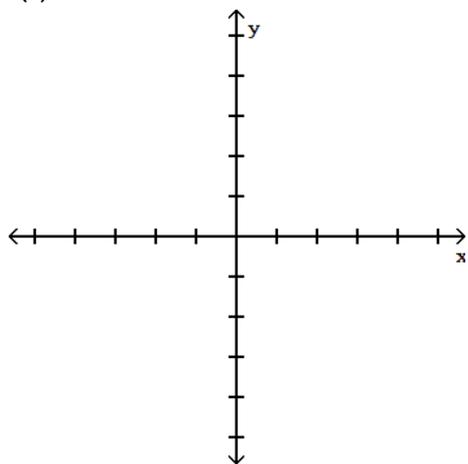
Answer: C

Diff: 0 Type: MC

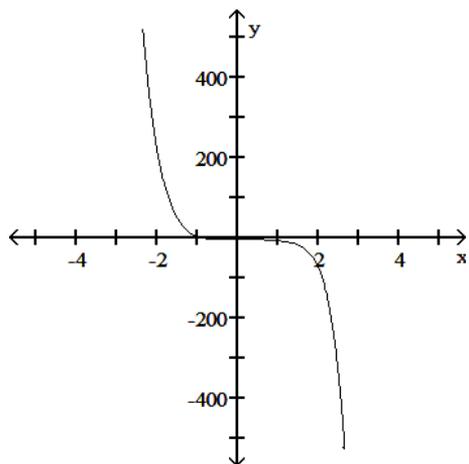
Determine an appropriate viewing window for the given function and use it to display its graph.

162) $f(x) = -0.6x^6 - x^5 + 6x^4 - 5x^3 - 5x^2 + x - 3$

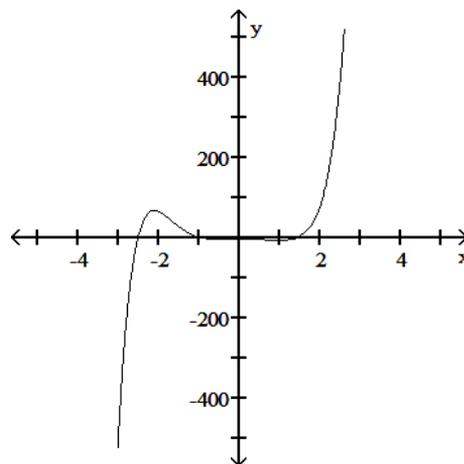
162) _____



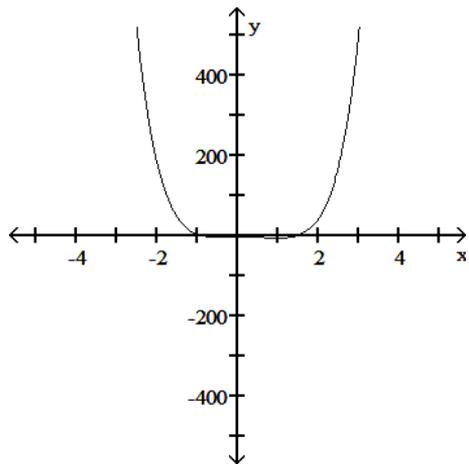
A)



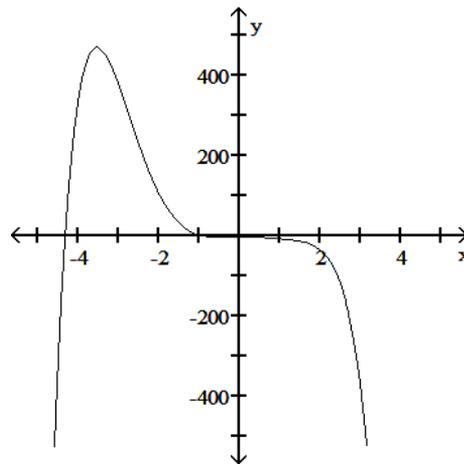
B)



C)



D)



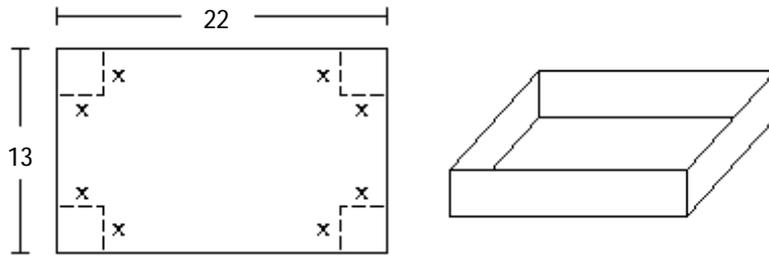
Answer: D

Diff: 0 Type: BI

Solve the problem.

163) A box with an open top is to be constructed from a rectangular piece of cardboard with dimensions 13 inches by 22 inches by cutting out equal squares of side x at each corner and then folding up the sides as in the figure. Express the volume V of the box as a function of x .

163) _____



A) $V(x) = (13 - x)(22 - x)$

B) $V(x) = x(13 - x)(22 - x)$

C) $V(x) = (13 - 2x)(22 - 2x)$

D) $V(x) = x(13 - 2x)(22 - 2x)$

Answer: D

Diff: 0 Type: BI

Answer Key

Testname: CH1

- 1) A
Diff: 0 Page Ref:
Topic:
- 2) A
Diff: 0 Page Ref:
Topic:
- 3) C
Diff: 0 Page Ref:
Topic:
- 4) B
Diff: 0 Page Ref:
Topic:
- 5) D
Diff: 0 Page Ref:
Topic:
- 6) C
Diff: 0 Page Ref:
Topic:
- 7) B
Diff: 0 Page Ref:
Topic:
- 8) D
Diff: 0 Page Ref:
Topic:
- 9) A
Diff: 0 Page Ref:
Topic:
- 10) C
Diff: 0 Page Ref:
Topic:
- 11) D
Diff: 0 Page Ref:
Topic:
- 12) C
Diff: 0 Page Ref:
Topic:
- 13) B
Diff: 0 Page Ref:
Topic:
- 14) C
Diff: 0 Page Ref:
Topic:
- 15) D
Diff: 0 Page Ref:
Topic:
- 16) B
Diff: 0 Page Ref:
Topic:

Answer Key

Testname: CH1

- 17) D
Diff: 0 Page Ref:
Topic:
- 18) A
Diff: 0 Page Ref:
Topic:
- 19) C
Diff: 0 Page Ref:
Topic:
- 20) B
Diff: 0 Page Ref:
Topic:
- 21) B
Diff: 0 Page Ref:
Topic:
- 22) B
Diff: 0 Page Ref:
Topic:
- 23) A
Diff: 0 Page Ref:
Topic:
- 24) D
Diff: 0 Page Ref:
Topic:
- 25) D
Diff: 0 Page Ref:
Topic:
- 26) B
Diff: 0 Page Ref:
Topic:
- 27) A
Diff: 0 Page Ref:
Topic:
- 28) C
Diff: 0 Page Ref:
Topic:
- 29) B
Diff: 0 Page Ref:
Topic:
- 30) D
Diff: 0 Page Ref:
Topic:
- 31) D
Diff: 0 Page Ref:
Topic:
- 32) B
Diff: 0 Page Ref:
Topic:

Answer Key

Testname: CH1

- 33) D
Diff: 0 Page Ref:
Topic:
- 34) C
Diff: 0 Page Ref:
Topic:
- 35) D
Diff: 0 Page Ref:
Topic:
- 36) C
Diff: 0 Page Ref:
Topic:
- 37) D
Diff: 0 Page Ref:
Topic:
- 38) B
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Topic:
- 39) B
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Topic:
- 40) C
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Topic:
- 41) A
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- 42) A
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- 43) A
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- 44) A
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Topic:
- 45) B
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Topic:
- 46) C
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Topic:
- 47) D
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Topic:
- 48) B
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Topic:

Answer Key
Testname: CH1

- 49) A
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Topic:
- 50) B
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Topic:
- 51) C
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Topic:
- 52) B
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Topic:
- 53) A
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Topic:
- 54) B
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Topic:
- 55) C
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Topic:
- 56) A
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Topic:
- 57) C
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Topic:
- 58) D
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Topic:
- 59) C
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Topic:
- 60) A
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Topic:
- 61) C
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Topic:
- 62) A
Diff: 0 Page Ref:
Topic:
- 63) D
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Topic:
- 64) D
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Topic:

Answer Key

Testname: CH1

- 65) D
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Topic:
- 66) B
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Topic:
- 67) C
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Topic:
- 68) C
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Topic:
- 69) B
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Topic:
- 70) B
Diff: 0 Page Ref:
Topic:
- 71) B
Diff: 0 Page Ref:
Topic:
- 72) A
Diff: 0 Page Ref:
Topic:
- 73) B
Diff: 0 Page Ref:
Topic:
- 74) D
Diff: 0 Page Ref:
Topic:
- 75) B
Diff: 0 Page Ref:
Topic:
- 76) A
Diff: 0 Page Ref:
Topic:
- 77) C
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Topic:
- 78) B
Diff: 0 Page Ref:
Topic:
- 79) A
Diff: 0 Page Ref:
Topic:
- 80) D
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Topic:

Answer Key

Testname: CH1

- 81) C
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Topic:
- 82) B
Diff: 0 Page Ref:
Topic:
- 83) A
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Topic:
- 84) A
Diff: 0 Page Ref:
Topic:
- 85) B
Diff: 0 Page Ref:
Topic:
- 86) A
Diff: 0 Page Ref:
Topic:
- 87) B
Diff: 0 Page Ref:
Topic:
- 88) D
Diff: 0 Page Ref:
Topic:
- 89) C
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Topic:
- 90) A
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Topic:
- 91) C
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Topic:
- 92) D
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Topic:
- 93) A
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Topic:
- 94) D
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Topic:
- 95) A
Diff: 0 Page Ref:
Topic:
- 96) D
Diff: 0 Page Ref:
Topic:

Answer Key

Testname: CH1

97) B

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Topic:

98) D

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Topic:

99) C

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Topic:

100) D

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Topic:

101) C

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Topic:

102) B

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Topic:

103) D

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Topic:

104) D

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Topic:

105) C

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Topic:

106) A

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Topic:

107) C

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Topic:

108) C

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Topic:

109) D

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Topic:

110) D

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Topic:

111) B

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Topic:

112) B

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Topic:

Answer Key

Testname: CH1

- 113) A
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Topic:
- 114) B
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Topic:
- 115) C
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Topic:
- 116) B
Diff: 0 Page Ref:
Topic:
- 117) D
Diff: 0 Page Ref:
Topic:
- 118) A
Diff: 0 Page Ref:
Topic:
- 119) C
Diff: 0 Page Ref:
Topic:
- 120) C
Diff: 0 Page Ref:
Topic:
- 121) D
Diff: 0 Page Ref:
Topic:
- 122) C
Diff: 0 Page Ref:
Topic:
- 123) B
Diff: 0 Page Ref:
Topic:
- 124) D
Diff: 0 Page Ref:
Topic:
- 125) B
Diff: 0 Page Ref:
Topic:
- 126) C
Diff: 0 Page Ref:
Topic:
- 127) D
Diff: 0 Page Ref:
Topic:
- 128) C
Diff: 0 Page Ref:
Topic:

Answer Key

Testname: CH1

- 129) D
Diff: 0 Page Ref:
Topic:
- 130) D
Diff: 0 Page Ref:
Topic:
- 131) D
Diff: 0 Page Ref:
Topic:
- 132) D
Diff: 0 Page Ref:
Topic:
- 133) A
Diff: 0 Page Ref:
Topic:
- 134) A
Diff: 0 Page Ref:
Topic:
- 135) C
Diff: 0 Page Ref:
Topic:
- 136) B
Diff: 0 Page Ref:
Topic:
- 137) A
Diff: 0 Page Ref:
Topic:
- 138) D
Diff: 0 Page Ref:
Topic:
- 139) B
Diff: 0 Page Ref:
Topic:
- 140) A
Diff: 0 Page Ref:
Topic:
- 141) B
Diff: 0 Page Ref:
Topic:
- 142) B
Diff: 0 Page Ref:
Topic:
- 143) A
Diff: 0 Page Ref:
Topic:
- 144) B
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Topic:

Answer Key

Testname: CH1

- 145) A
Diff: 0 Page Ref:
Topic:
- 146) C
Diff: 0 Page Ref:
Topic:
- 147) B
Diff: 0 Page Ref:
Topic:
- 148) C
Diff: 0 Page Ref:
Topic:
- 149) A
Diff: 0 Page Ref:
Topic:
- 150) A
Diff: 0 Page Ref:
Topic:
- 151) B
Diff: 0 Page Ref:
Topic:
- 152) D
Diff: 0 Page Ref:
Topic:
- 153) D
Diff: 0 Page Ref:
Topic:
- 154) A
Diff: 0 Page Ref:
Topic:
- 155) B
Diff: 0 Page Ref:
Topic:
- 156) D
Diff: 0 Page Ref:
Topic:
- 157) B
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Topic:
- 158) D
Diff: 0 Page Ref:
Topic:
- 159) D
Diff: 0 Page Ref:
Topic:
- 160) D
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Topic:

Answer Key

Testname: CH1

161) C

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Topic:

162) D

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Topic:

163) D

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Topic: