1. What are the solutions to the equation $x^2 - 6x + 5 = -8$?

   A. 2 and 3
   B. $2i$ and $3i$
   C. $3 + 2 \cdot 3$ and $3 - 2 \cdot 3$
   D. $3 + 2i$ and $3 - 2i$

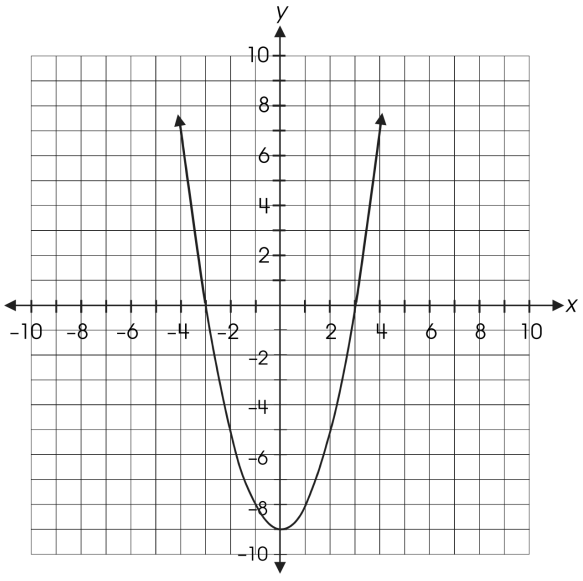
2. An object that is projected straight downward with initial velocity v feet per second travels a distance $s = vt + 16t^2$, where t = time in seconds. If Ramón is standing on a balcony 84 feet above the ground and throws a penny straight down with an initial velocity of 10 feet per second, in how many seconds will it reach the ground?

   A. 2 seconds
   B. 3 seconds
   C. 6 seconds
   D. 8 seconds

3. Which equation is equivalent to $y = 3x^2 + 6x + 5$?

   A. $y = 3(x + 3)^2 - 9$
   B. $y = 3(x + 3)^2 - 4$
   C. $y = 3(x + 1)^2 + 4$
   D. $y = 3(x + 1)^2 + 2$

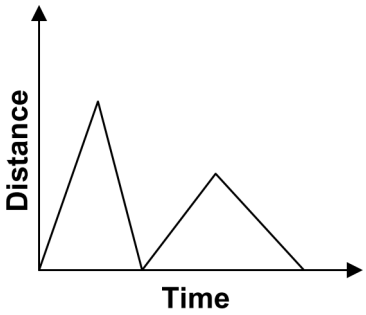
4. The graph of $y = x^2 - 9$ is shown.



   For what values of x does $x^2 - 9 = 0$?

   A. $x = 2$ and $x = -2$
   B. $x = 3$ and $x = -3$
   C. $x = 4.5$ and $x = 0$
   D. $x = -9$ and $x = 0$

5. Look at the graph.



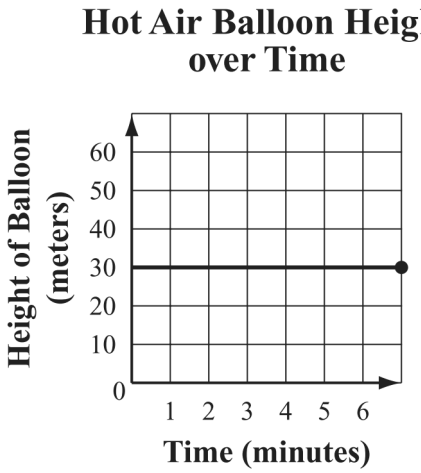
   Which situation is *best* represented by the graph?

   A. Nora runs to school. Along the way, she stops to pet a dog.
   B. Nora walks to the store, buys some books, and then walks home again.
   C. Nora reads a book, then does her homework, then watches TV, and then listens to music.
   D. Nora throws a ball into the air and catches it. Then she throws it into the air again and catches it.

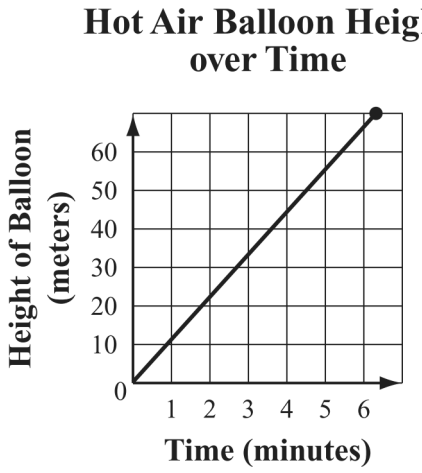
6. A hot air balloon lifted off the ground and rose straight up at a constant speed.

Which of the following graphs best represents the height of the hot air balloon above the ground over time?

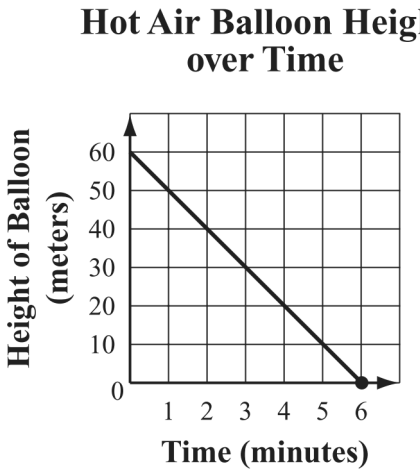
A.



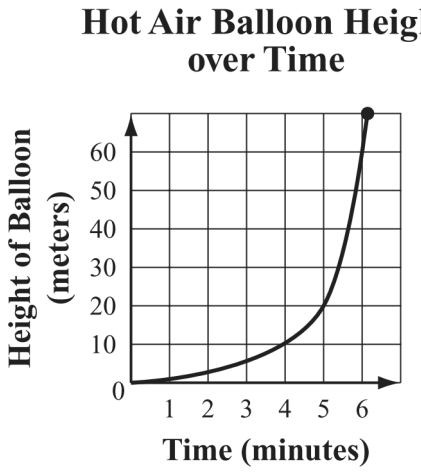
B.



C.



D.



---

7. Which of the following sentences is true about the graphs of $y = 3(x - 5)^2 + 1$ and $y = 3(x + 5)^2 + 1$?

A. Their vertices are maximums.

B. The graphs have the same shape with different vertices.

C. The graphs have different shapes with different vertices.

D. One graph has a vertex that is a maximum, while the other graph has a vertex that is a minimum.

8. What are the x-intercepts of the graph of $y = 12x^2 - 5x - 2$?

A. 1 and $-\frac{1}{6}$

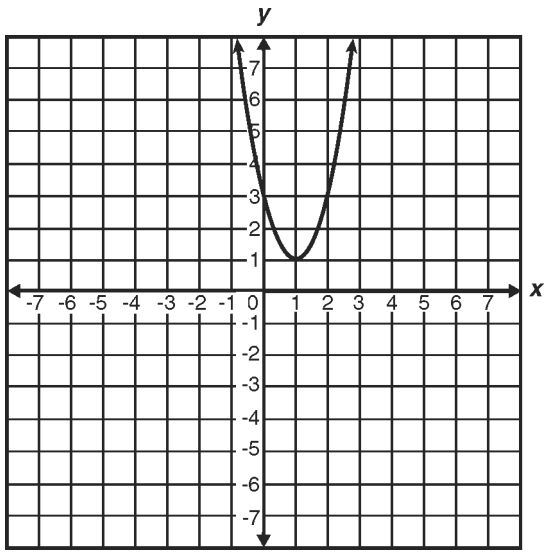
B. -1 and $\frac{1}{6}$

C. $\frac{2}{3}$ and $-\frac{1}{4}$

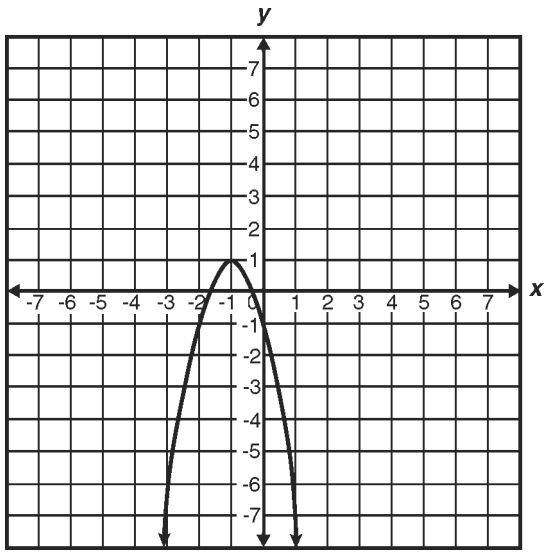
D. $-\frac{2}{3}$ and $\frac{1}{4}$

9. Which is the graph of $y = -2(x-1)^2 + 1$?

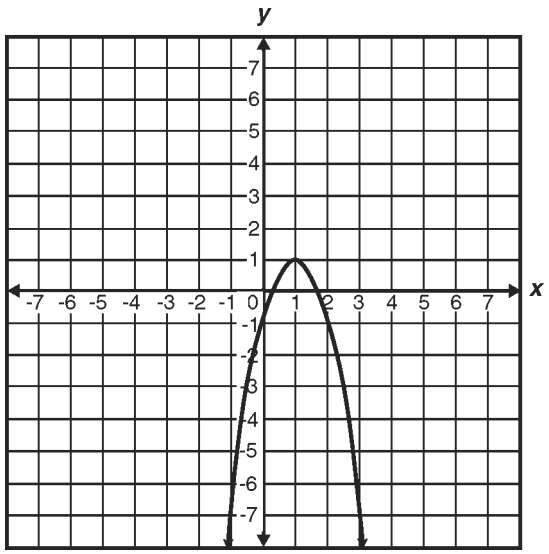
A.



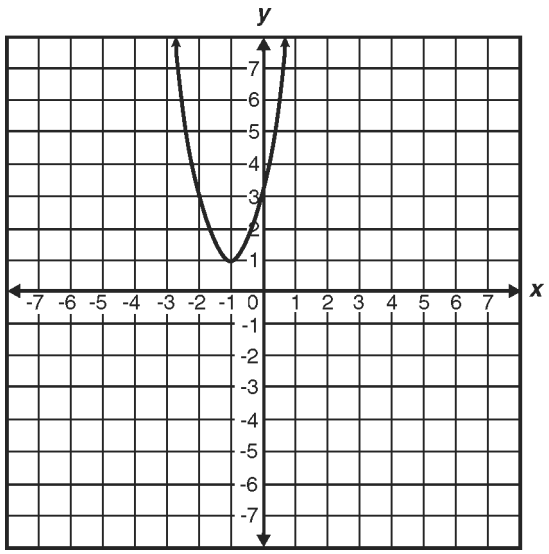
B.



C.



D.



10. $4x^2 - 5y^2 - 16x - 30y - 9 = 0$

What is the standard form of the equation of the conic given above?

A. $\frac{(x-4)^2}{11} - \frac{(y-3)^2}{4} = 1$

B. $\frac{(y+3)^2}{4} - \frac{(x-2)^2}{5} = 1$

C. $\frac{(y-3)^2}{6} - \frac{(x+2)^2}{9} = 1$

D. $\frac{(x-4)^2}{11} + \frac{(y-3)^2}{4} = 1$

11. Which statement describes the graph of the equation $x^2 + y^2 + 4x - 6y - 3 = 0$?

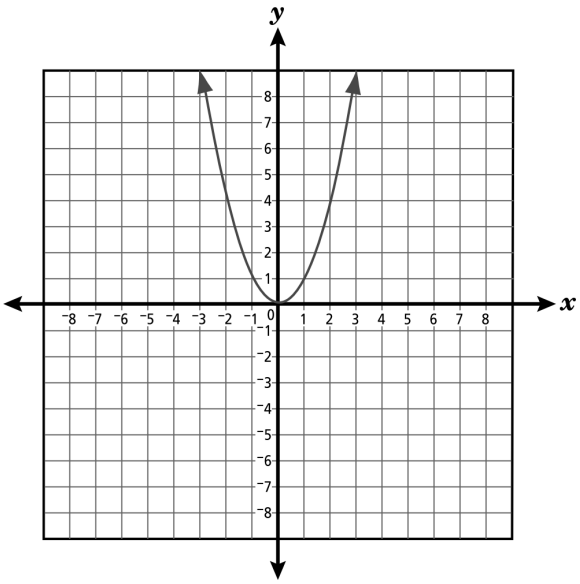
A. a hyperbola with center $(-2, 3)$ and vertices, $(4, -3)$ and $(-4, 3)$

B. a hyperbola with center $(-2, 3)$ and vertices, $(2, -3)$ and $(3, -2)$

C. a circle with center $(-2, 3)$ and radius 8

D. a circle with center $(-2, 3)$ and radius 4,

12. Study the graph of $y = x^2$, shown below.



If the graph is moved up 3 units, what equation will it represent?

A. $y = x^2 + 3$

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

C. $y = (x - 3)^2$

D. $y = x^2 - 3$

13. Which pair of tables represent y_1 as a linear function and y_2 as an exponential function?

A.

x	y_1
−2	6
−1	3
0	0
1	−3
2	−6

x	y_2
−2	9
−1	3
0	1
1	$\frac{1}{3}$
2	$\frac{1}{9}$

B.

x	y_1
−2	6
−1	3
0	0
1	−3
2	−6

x	y_2
−2	$\frac{1}{3}$
−1	$\frac{2}{3}$
0	1
1	$\frac{4}{3}$
2	$\frac{5}{3}$

C.

x	y_1
−2	−8
−1	−1
0	0
1	1
2	8

x	y_2
−2	$\frac{1}{100}$
−1	$\frac{1}{10}$
0	1
1	10
2	100

D.

x	y_1
−2	8
−1	2
0	0
1	2
2	8

x	y_2
−2	−32
−1	−1
0	0
1	1
2	32

14. Which of the following functions will yield the largest value for $x = 50$?

A. $f(x) = 5 + x$

B. $f(x) = 5x$

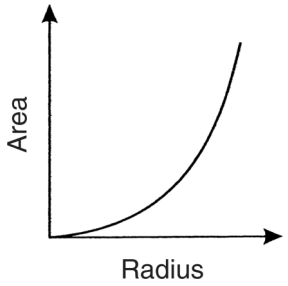
C. $f(x) = x^2$

D. $f(x) = 5^x$

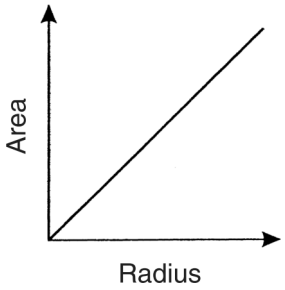
15. Which of these graphs correctly represents the relationship indicated in the table shown below?

Radius (in units)	1	2	3	4	5	6	7	8
Area (in square units)	π	4π	9π	16π	25π	36π	49π	64π

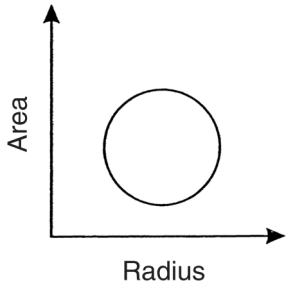
A.



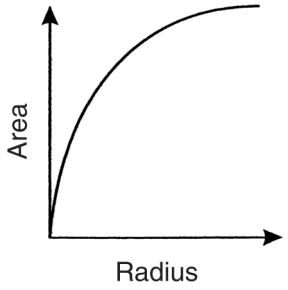
B.



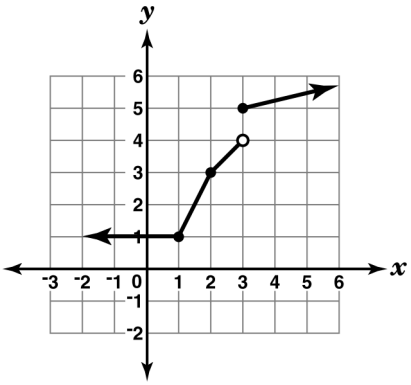
C.



D.



16. Look at the function that is graphed below.



Which of these statements about the function is true?

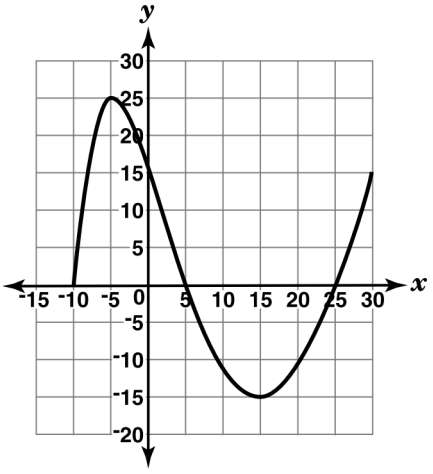
A. It is continuous.

B. It is not continuous at $x = 1$.

C. It is not continuous at $x = 2$.

D. It is not continuous at $x = 3$.

17. Look at the function that is graphed below.



What are the maximum and minimum values of this function?

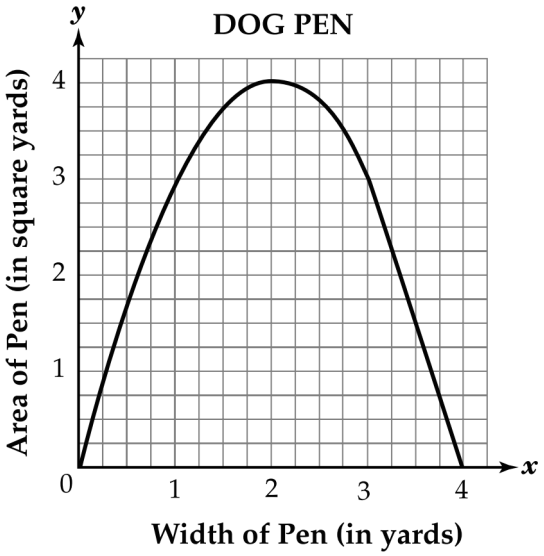
A. maximum 15, minimum -5

B. maximum 25, minimum -15

C. maximum 25, minimum -10

D. maximum 30, minimum -10

18. Doug makes a rectangular dog pen using 8 yards of fencing. The graph below shows the relationship between the width of the pen and the area of the pen.



In the ordered pair $(2, 4)$, what does the y-coordinate represent?

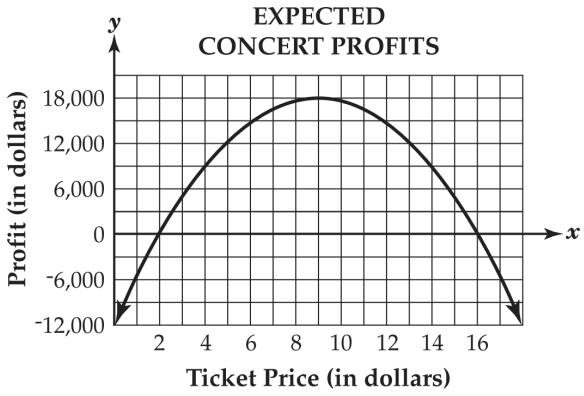
A. maximum area of the pen

B. maximum width of the pen

C. maximum length of the pen

D. maximum perimeter of the pen

19. The graph below models the relationship between the ticket price for a concert and the expected profits.



Which of these *best* describes the zero(s) of this function?

A. 9 is the zero, and indicates when profit is at the maximum

B. $-12{,}000$ is the zero, and indicates the cost to put on the concert

C. 2 and 16 are the zeros, and indicate the ticket price for which the profit is 0

D. 2 and 16 are the zeros, and indicate the number of tickets sold for which the profit is 0

20. Which type of function would produce the data shown in the table?

x	y
1	-2
3	6
4	7
6	3

A. linear

B. quadratic

C. cubic

D. exponential

21. Given $y = x^2$, how would the graph of $y = x^2 - 2$ differ?

A. It shifts 2 units up.

B. It shifts 2 units down.

C. It shifts 2 units left.

D. It shifts 2 units right.

22. The population of a type of bacteria triples every minute. The chart below represents the population of bacteria after t minutes.

t	Bacteria Population
0	1
1	3
2	9
3	27
4	81
5	243

Which type of function represents the data?

A. linear

B. quadratic

C. exponential

D. absolute value

23. Which relation is a function?

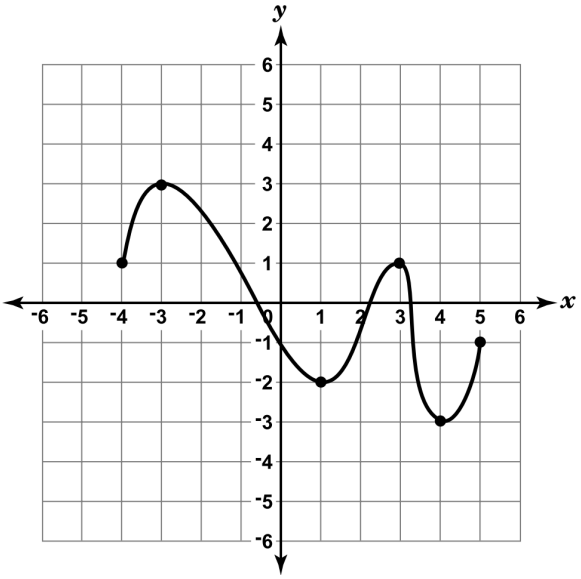
A. $\{(-1, 2),\ (1, 4),\ (4, 8),\ (8, 8)\}$

B. $\{(1, 5),\ (2, 6),\ (3, 7),\ (2, 7)\}$

C. $\{(-1, 2),\ (-1, 3),\ (-1, 4),\ (-1, 5)\}$

D. $\{(1, 2),\ (-1, 3),\ (1, 4),\ (-1, 5)\}$

24. Look at the function that is graphed below.



What is the range of this function?

A. $-4 \le y \le 5$ B. $-3 \le y \le 3$

C. $-2 \le y \le 3$ D. $-4 \le y \le -1$

25. Given $f(x) = -3x^2 + 5$, what is the range of the function?

A. all real numbers less than or equal to 5

B. all integers less than or equal to 5

C. all nonnegative real numbers

D. all nonnegative integers

26. What is the domain of the function $f(x) = \sqrt{x^2 - 3x - 10}$?

A. $-2 \le x \le 5$ B. $x \le -2$ or $x \ge 5$

C. $x \ge 5$ D. $x \ge -2$

27. Leanne correctly solved the equation $x^2 + 4x = 6$ by completing the square. Which equation is part of her solution?

A. $(x + 2)^2 = 8$ B. $(x + 2)^2 = 10$

C. $(x + 4)^2 = 10$ D. $(x + 4)^2 = 22$

28. Pedro throws a ball upward at a rate of 20 meters per second from an initial height of 2 meters. The height of the ball above the ground can be approximated by $h = -5t^2 + 20t + 2$, where t represents the amount of time, in seconds, since the ball has been released.

What is the maximum height that the ball reaches?

A. 5 meters B. 6 meters C. 20 meters D. 22 meters

29. Which product of factors is equivalent to $(x + 1)^2 - y^2$?

A. $(x + 1 + y)^2$ B. $(x + 1 - y)^2$

C. $(x - 1 + y)(x - 1 - y)$ D. $(x + 1 + y)(x + 1 - y)$

30. What are the first 4 terms in the expansion of $(1 + 2x)^6$?

A. $1 + 12x + 30x^2 + 40x^3$ B. $1 + 12x + 24x^2 + 48x^2$

C. $1 + 12x + 30x^2 + 120x^2$ D. $1 + 12x + 60x^2 + 160x^2$

31. A polynomial, $P(x)$, has real coefficients and also has zeros at 1, $1 + i$, and $2 - i$. Then this polynomial must have a degree of:

A. at least 5 B. exactly 6 C. exactly 3

D. at least 6 E. none of these

32. Find all the roots (integral, rational, and/or complex) of the polynomial:

$$x^4 + x^3 - 16x^2 - 4x + 48$$

A. $(2, -2, -4, 3)$ B. $(2, -2, i, 3)$ C. $(2, -4, 3, 5)$

D. $(2, -2, -i, 3)$ E. none of these

33. Expand $(1 + i)^{15}$.

A. $256 + 256i$ B. $-256 + 256i$ C. $256 - 256i$

D. $128 + 128i$ E. $128 - 128i$

34. Using complex numbers, factor $a^4 - b^4$ completely as:

A. $(a^2 - b^2)(a^2 + b^2)$

B. $(a - b)(a^3 + b^3)$

C. $(a - b)(a - b)(a + b)(a + b)$

D. $(a - b)(a + b)(a - bi)(a + bi)$

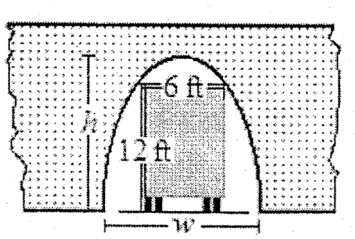
E. none of these

35. Simplify: $\dfrac{6 + \sqrt{-2}}{3 - \sqrt{-2}}$

A. $\frac{20}{11} - \frac{3}{11}i\sqrt{2}$ B. $\frac{16}{11} + \frac{9}{11}i\sqrt{2}$ C. $\frac{20}{7} - \frac{9}{7}\sqrt{2}$

D. $\dfrac{6i\sqrt{2} - 2}{3i\sqrt{2} + 2}$ E. none of these

36. A divided highway into the city passes under a number of bridges. The arch over each lane is in the form of a semi-ellipse, where the height is equal to the width. What is the lowest bridge under which a truck 6 feet wide and 12 feet high can theoretically pass?



A. $3\sqrt{5}$ feet B. $\sqrt{153}$ feet C. $6\sqrt{5}$ feet

D. $2\sqrt{153}$ feet E. None of these

37. Which of the following statements hold regarding conic sections and their foci?

I. The foci of an ellipse must *always* lie on the minor axis of the ellipse.

II. In a hyperbola, the difference of the distances between any point on the hyperbola and the two foci is a constant.

III. The sum of the distances from any point on an ellipse to its foci is the length of the major axis.

A. I only B. III only C. I and II only

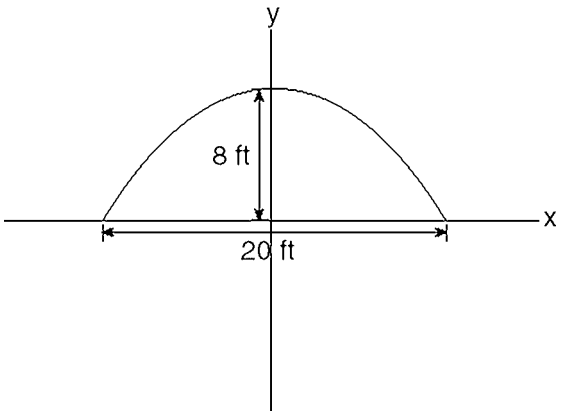
D. II and III only E. All are correct

38. An equation of the circle whose center is at $(2, -3)$ and whose radius measures 4 is

A. $(x-2)^2 + (y+3)^2 = 16$ B. $(x+2)^2 + (y-3)^2 = 16$

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

39. An architect is designing a building to include an arch in the shape of a semi-ellipse (half an ellipse), such that the width of the arch is 20 feet and the height of the arch is 8 feet, as shown in the accompanying diagram.

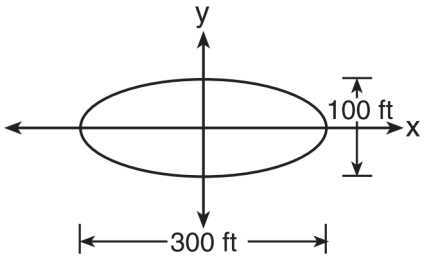


Which equation models this arch?

A. $\frac{x^2}{100} + \frac{y^2}{64} = 1$ B. $\frac{x^2}{400} + \frac{y^2}{64} = 1$

C. $\frac{x^2}{64} + \frac{y^2}{100} = 1$ D. $\frac{x^2}{64} + \frac{y^2}{400} = 1$

40. The accompanying diagram represents the elliptical path of a ride at an amusement park.



Which equation represents this path?

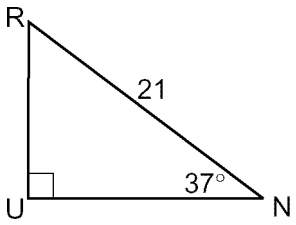
A. $x^2 + y^2 = 300$ B. $y = x^2 + 100x + 300$

C. $\frac{x^2}{150^2} + \frac{y^2}{50^2} = 1$ D. $\frac{x^2}{150^2} - \frac{y^2}{50^2} = 1$

41. An object orbiting a planet travels in a path represented by the equation $3(y+1)^2 + 5(x+4)^2 = 15$. In which type of pattern does the object travel?

A. hyperbola B. ellipse C. circle D. parabola

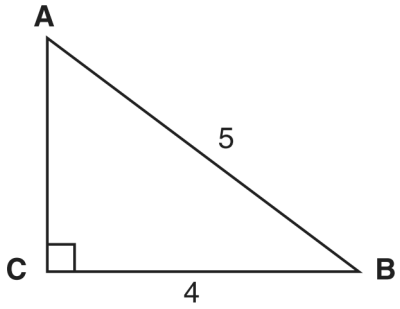
42. In the accompanying diagram of right triangle RUN, $m\angle U = 90$, $m\angle N = 37$, and $RN = 21$.



What is the length of $\overline{RU}$, expressed to the *nearest tenth*?

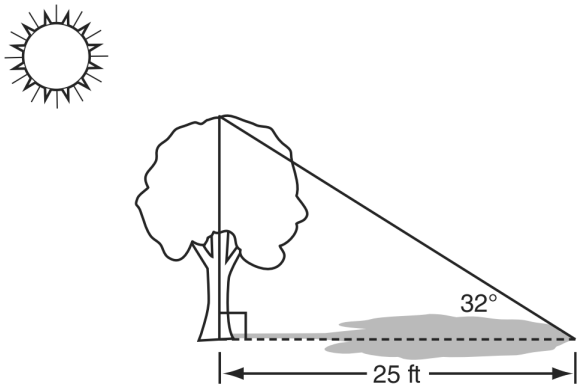
A. 12.6 B. 15.8 C. 16.8 D. 34.9

43. Which equation could be used to find the measure of one acute angle in the right triangle shown below?



A. $\sin A = \frac{4}{5}$ B. $\tan A = \frac{5}{4}$ C. $\cos B = \frac{5}{4}$ D. $\tan B = \frac{5}{4}$

44. A tree casts a 25-foot shadow on a sunny day, as shown in the diagram below.



If the angle of elevation from the tip of the shadow to the top of the tree is 32°, what is the height of the tree to the *nearest tenth of a foot*?

A. 13.2 B. 15.6 C. 21.2 D. 40.0

45. Expressed in degrees, $\frac{8\pi}{3}$ is equivalent to

A. 240° B. 300° C. 420° D. 480°

46. If placed in standard position, an angle of $\frac{11}{6}\pi$ radians has the same terminal side as an angle of

A. $-150°$ B. $-30°$ C. $150°$ D. $240°$

47. Which expression is equivalent to $\sin(-120°)$?

A. $\sin 60°$ B. $-\sin 60°$ C. $\cos 30°$ D. $-\sin 30°$

48. Which expression is equivalent to $\cos 150°$?

A. $\cos 60°$ B. $-\cos 60°$ C. $\cos 30°$ D. $-\cos 30°$

49. The value of $\sin \frac{7\pi}{6}$ is

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

50. What is the numerical value of the product $\left(\tan \frac{\pi}{4}\right)\left(\cos \frac{\pi}{3}\right)$?

51. If $\sin\theta = -\frac{4}{5}$ and θ is in Quadrant IV, find $\tan\theta$.

52. What is the value of $\cos(-120°)$?

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

53. If θ terminates in Quadrant II and $\sin\theta = \frac{12}{13}$, find $\cos\theta$.

54. If $y = \sin(\arccos \frac{1}{2})$, the value of y is

A. $\frac{1}{2}$ B. $\frac{\sqrt{3}}{2}$ C. $30°$ D. $60°$

55. What is the value of $\cos(\arctan \frac{\sqrt{7}}{3})$?

A. $\frac{3}{4}$ B. $\frac{3}{16}$ C. $\frac{3\sqrt{7}}{7}$ D. $\frac{\sqrt{7}}{4}$

56. Evaluate: $\cos[\arcsin(-1)]$

57. $\cos 70° \cos 40° - \sin 70° \sin 40°$ is equivalent to

A. $\cos 30°$ B. $\cos 70°$ C. $\cos 110°$ D. $\sin 70°$

58. What is the value of $\sin 210° \cos 30° - \cos 210° \sin 30°$?

A. 1 B. -1 C. 0 D. 180

59. The expression $2\sin 30^\circ \cos 30^\circ$ has the same value as

A. $\sin 15^\circ$ B. $\cos 60^\circ$ C. $\sin 60^\circ$ D. $\cos 15^\circ$

60. The expression $\cos^2 40 - \sin^2 40$ has the same value as

A. $\sin 20$ B. $\sin 80$ C. $\cos 80$ D. $\sin 20$

61. If $\cos A = \frac{1}{3}$, then the positive value of $\tan \frac{1}{2}A$ is

A. $\sqrt{2}$ B. $\sqrt{3}$ C. $\frac{\sqrt{3}}{3}$ D. $\frac{\sqrt{2}}{2}$

62. If $\sin A = \frac{5}{13}$, find $\cos 2A$.

63. If x is an acute angle and $\sin x = \frac{12}{13}$, then $\cos 2x$ equals

A. $\frac{25}{169}$ B. $\frac{119}{169}$ C. $-\frac{25}{169}$ D. $-\frac{119}{169}$

64. What is the minimum value of $f(\theta)$ in the equation $f(\theta) = 3\sin 4\theta$?

A. -1 B. -2 C. -3 D. -4

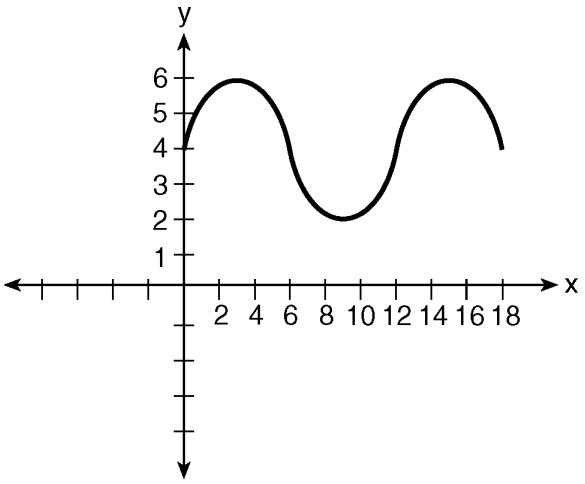
65. What is the period of the graph whose equation is $y = 2\sin 4x$?

A. $\frac{4\pi}{3}$ B. $\frac{\pi}{2}$ C. 3 D. 4

66. What is the amplitude of the function $y = \frac{2}{3}\sin 3x$?

A. 1 B. $\frac{2}{3}$ C. 3 D. $\frac{2\pi}{3}$

67. What is the amplitude of the function shown in the accompanying graph?

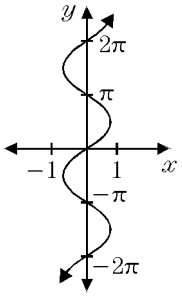


A. 1.5 B. 2 C. 6 D. 12

68. Which is an equation of the given graph?

A. $y = \arcsin x$ B. $y = \arccos x$

C. $y = \sec x$ D. $y = \csc x$



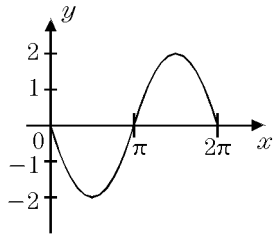
69. Which is an equation of the graph shown?

A. $y = \sin 2x$

B. $y = -\sin 2x$

C. $y = -2\sin x$

D. $y = 2\sin x$



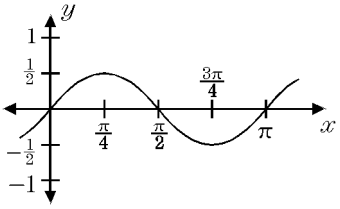
70. Which equation is represented by the graph below?

A. $y = 2\sin \frac{1}{2}x$

B. $y = \frac{1}{2}\sin \frac{1}{2}x$

C. $y = \frac{1}{2}\sin 2x$

D. $y = -\frac{1}{2}\cos 2x$



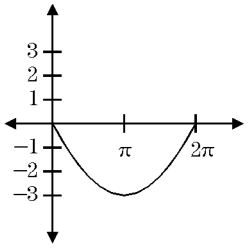
71. Which equation is represented by the graph in the accompanying diagram?

A. $y = 3\sin x$

B. $y = 3\sin \frac{1}{2}x$

C. $y = -3\sin x$

D. $y = -3\sin \frac{1}{2}x$



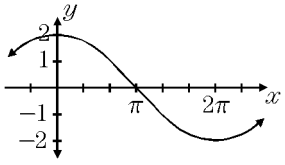
72. Which equation is represented in the accompanying graph?

A. $y = 2\cos 2x$

B. $y = \frac{1}{2}\cos 2x$

C. $y = 2\cos \frac{1}{2}x$

D. $y = \frac{1}{2}\cos \frac{1}{2}x$



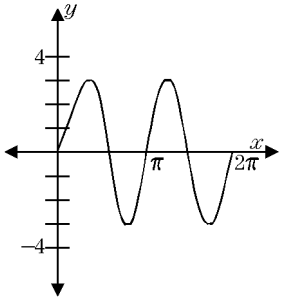
73. Which equation is represented by the graph in the accompanying diagram?

A. $y = 3\sin 2x$

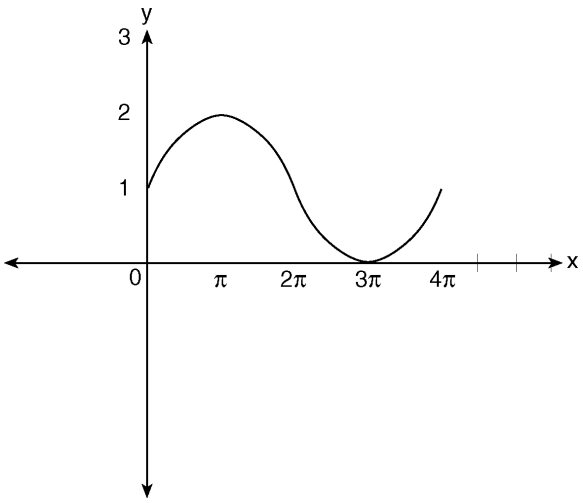
B. $y = 2\sin 3x$

C. $y = 3\sin x$

D. $y = 2\sin 4x$



74. In physics class, Eva noticed the pattern shown in the accompanying diagram on an oscilloscope.



Which equation best represents the pattern shown on this oscilloscope?

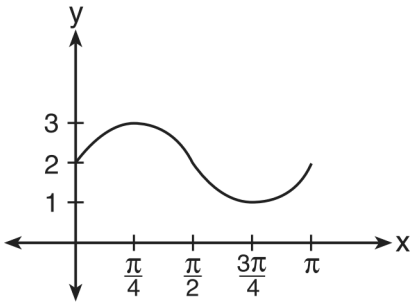
A. $y = \sin(\frac{1}{2}x) + 1$

B. $y = \sin x + 1$

C. $y = 2\sin x + 1$

D. $y = 2\sin(-\frac{1}{2}x) + 1$

75. The accompanying graph represents a portion of a sound wave.



Which equation best represents this graph?

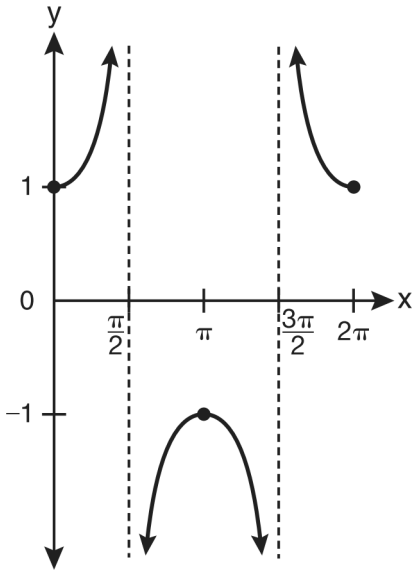
A. $y = 2\sin\frac{1}{2}x$

B. $y = \sin\frac{1}{2}x + 2$

C. $y = \sin 2x$

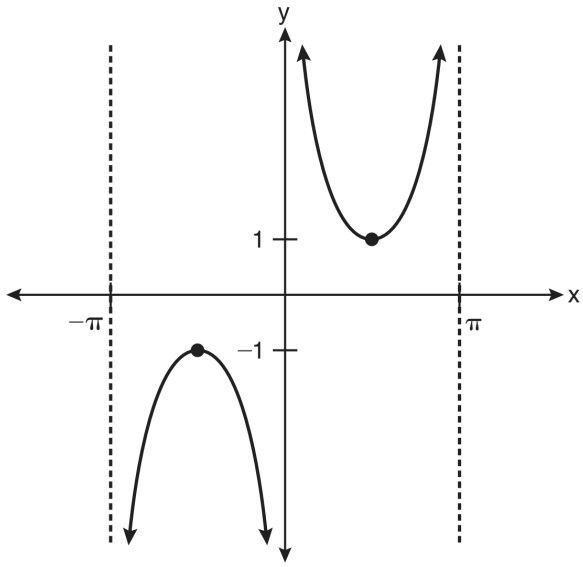
D. $y = \sin 2x + 2$

76. Which equation is represented by the graph below?



A. $y = \cot x$ B. $y = \csc x$ C. $y = \sec x$ D. $y = \tan x$

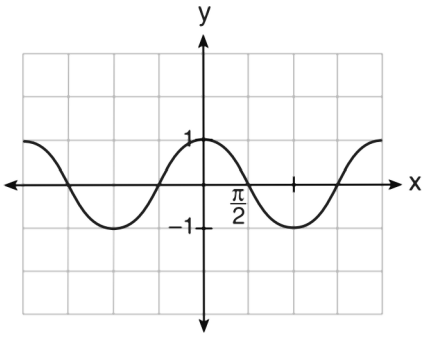
77. Which equation is sketched in the diagram below?



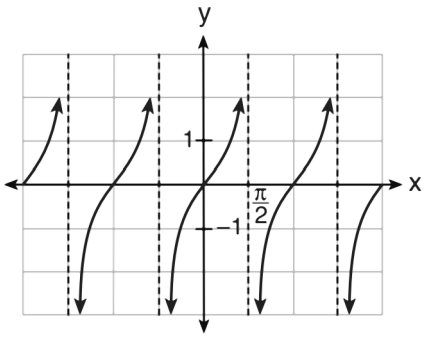
A. $y = \csc x$ B. $y = \sec x$ C. $y = \cot x$ D. $y = \tan x$

78. Which is a graph of $y = \cot x$?

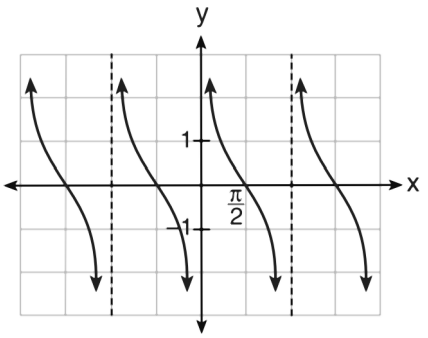
A.



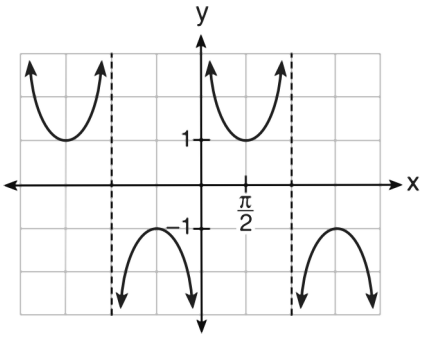
B.



C.



D.



79. A solution of the equation $\sqrt{4\sin x + 7} = 3$ is

A. $\frac{\pi}{4}$ B. $\frac{\pi}{3}$ C. $\frac{\pi}{6}$ D. $\frac{\pi}{2}$

80. Which value of x does not satisfy the equation $\sin^2 x + \sin x = 0$?

A. $\frac{\pi}{2}$ B. 2π C. $\frac{3}{2}\pi$ D. π

81. In the interval $0 \le x < 2\pi$, the solutions of the equation $\sin^2 x = \sin x$ are

A. $0, \frac{\pi}{2}, \pi$ B. $\frac{\pi}{2}, \frac{3\pi}{2}$ C. $0, \frac{\pi}{2}, \frac{3\pi}{2}$ D. $\frac{\pi}{2}, \pi, \frac{3\pi}{2}$

82. If θ is an angle in Quadrant I and $tan^2\theta - 4 = 0$, what is the value of θ to the *nearest degree*?

A. 1 B. 2 C. 63 D. 75

83. Which value of θ satisfies the equation $2\cos^2\theta - \cos\theta = 0$?

A. $\frac{\pi}{3}$ B. $\frac{\pi}{4}$ C. $\frac{\pi}{6}$ D. 0

84. What value of x in the interval $0^\circ \le x \le 180^\circ$ satisfies the equation $\sqrt{3}\tan x + 1 = 0$?

A. -30° B. 30° C. 60° D. 150°

85. In $\triangle ABC$, $m\angle A = 38$, $a = 11$, $b = 15$, and $\angle B$ is an obtuse angle. Find the measure of $\angle C$ to the *nearest degree*. [*Show or explain the procedure used to obtain your answer.*]

86. In $\triangle ABC$, $a = 10$, $b = 16$, and $m\angle A = 30$. Find $\sin B$.

87. In $\triangle ABC$, if $a = 5$, $b = 6$, and $m\angle C = 60$, the value of c is

A. 1 B. $\sqrt{31}$ C. $\sqrt{41}$ D. $\sqrt{51}$

88. In a triangle, the sides measure 3, 5, and 7. What is the measure, in degrees, of the largest angle?

A. 60 B. 90 C. 120 D. 150

89. Find the area of $\triangle ABC$ if $m\angle A = 30$, $b = 10$, and $c = 5$.

90. In $\triangle ABC$, $b = 3$, $c = 4$, and $\angle A = 45^\circ$. Expressed in simplest radical form, what is the area of $\triangle ABC$?

precalculus review II tuesday 5-28 05/24/2013

1.
Answer: D

2.
Answer: A

3.
Answer: B

4.
Answer: B

5.
Answer: D

6.
Answer: B

7.
Answer: B

8.
Answer: C

9.
Answer: C

10.
Answer: B

11.
Answer: D

12.
Answer: A

13.
Answer: A

14.
Answer: D

15.
Answer: A

16.
Answer: D

17.
Answer: B

18.
Answer: A

19.
Answer: C

20.

21.
Answer: B

22.
Answer: C

23.
Answer: A

24.
Answer: B

25.
Answer: A

26.
Answer: B

27.
Answer: B

28.
Answer: D

29.
Answer: D

30.
Answer: D

31.
Answer: A

32.
Answer: A

33.
Answer: E

34.
Answer: D

35.
Answer: B

36.
Answer: C

37.
Answer: D

38.
Answer: A

39.
Answer: A

40.
Answer: C

41.
Answer: B

42.
Answer: A

43.
Answer: A

44.
Answer: B

45.
Answer: D

46.
Answer: B

47.
Answer: B

48.
Answer: D

49.
Answer: B

50.
Answer: $\frac{1}{2}$

51.
Answer: $-\frac{4}{3}$

52.
Answer: B

53.
Answer: $-\frac{5}{13}$

54.
Answer: B

55.
Answer: A

56.
Answer: 0

57.
Answer: C

58.
Answer: C

59.
Answer: C

60.
Answer: C

61.
Answer: D

62.
Answer: $\frac{119}{169}$

63.
Answer: D

64.
Answer: C

65.
Answer: B

66.
Answer: B

67.
Answer: B

68.
Answer: A

69.
Answer: C

70.
Answer: C

71.
Answer: D

72.
Answer: C

73.
Answer: A

74.
Answer: A

75.
Answer: D

76.
Answer: C

77.
Answer: A

78.
Answer: C

79.
Answer: C

80.
Answer: A

81.
Answer: A

82.
Answer: C

83.
Answer: A

84.
Answer: D

85.
Answer: 19

86.
Answer: $\frac{4}{5}$

87.
Answer: B

88.
Answer: C

89.
Answer: $12\frac{1}{2}$

90.
Answer: $3\sqrt{2}$