

Chapter 2 Review

1 Which of the following quadratic functions does not have zeros of 12 and -3 ?

A $f(x) = \frac{1}{3}x^2 - 3x - 12$

B $f(x) = x^2 - 9x - 36$

C $f(x) = \frac{2}{3}x^2 + 6x - 24$

D $f(x) = -x^2 + 9x + 36$

2 What value of n is the solution to the equation below?

$$8\sqrt{n} + 1 = 5$$

Record your answer and fill in the bubbles below.

+	○	○	○	○	○	○	○	○
-	○	○	○	○	○	○	○	○
	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2
	3	3	3	3	3	3	3	3
	4	4	4	4	4	4	4	4
	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6
	7	7	7	7	7	7	7	7
	8	8	8	8	8	8	8	8
	9	9	9	9	9	9	9	9

3 A trapezoid has one base that is 3 times its height, and the other base is 1 meter longer than its height. If the area of the trapezoid is 120 square meters, which of the following equations can be used to find h , the height of the trapezoid in meters?

A $4h^2 + h - 240 = 0$

B $4h^2 + h + 240 = 0$

C $4h^2 + h - 60 = 0$

D $4h^2 + h + 60 = 0$

4 The table below shows ordered pairs that satisfy the quadratic function f .

x	$f(x)$
-4	41
-3	24
-2	11
-1	2
0	-3
1	-4
2	-1

Based on the table, a solution to the equation $f(x) = 0$ is found in which interval?

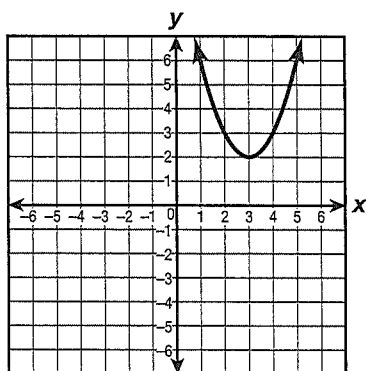
A $-4 < x < -3$

B $-3 < x < -2$

C $-2 < x < -1$

D $-1 < x < 0$

- 5 The graph of the quadratic function f is shown on the grid below.



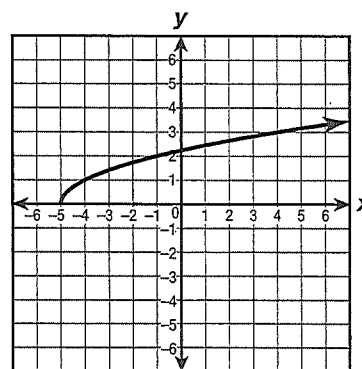
If the graph of f is reflected across the x -axis, which function best represents the new graph?

- A $g(x) = -(x + 3)^2 - 2$
 B $g(x) = -(x - 3)^2 - 2$
 C $g(x) = (x + 3)^2 + 2$
 D $g(x) = (3 - x)^2 + 2$
6. Which is true about the solutions of $2x^2 - 28x + 98 = 0$?
- A The equation has only one real root.
 B The equation has two real roots.
 C The equation has only one complex root.
 D The equation has two complex roots.

- 7 The formula $P = 2\pi\left(\sqrt{\frac{L}{32}}\right)$ can be used to approximate the period of a pendulum, where L is the pendulum's length in feet and P is the pendulum's period in seconds. If a pendulum's period is 2.3 seconds, which of the following is closest to the length of the pendulum?

- A 3.7 feet
 B 4.1 feet
 C 4.4 feet
 D 4.9 feet

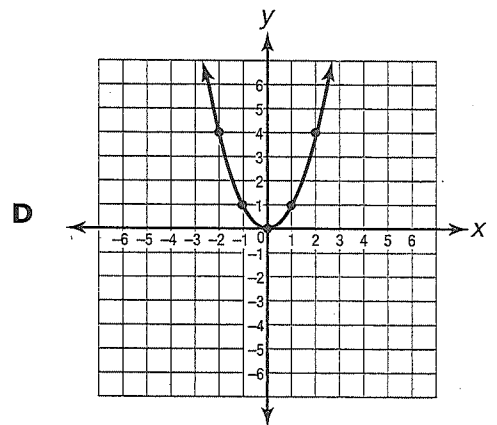
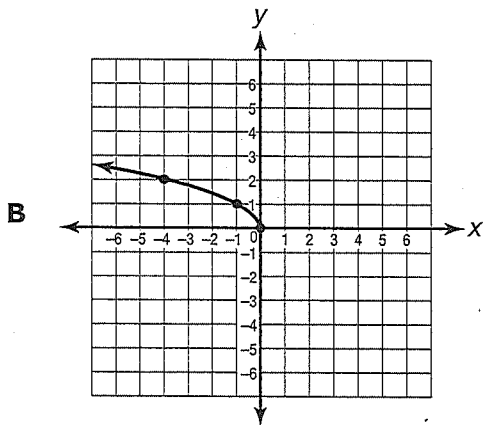
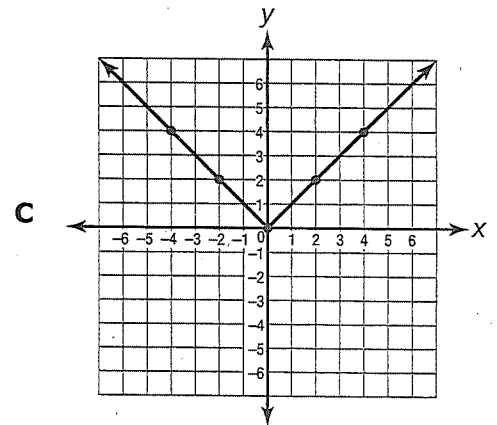
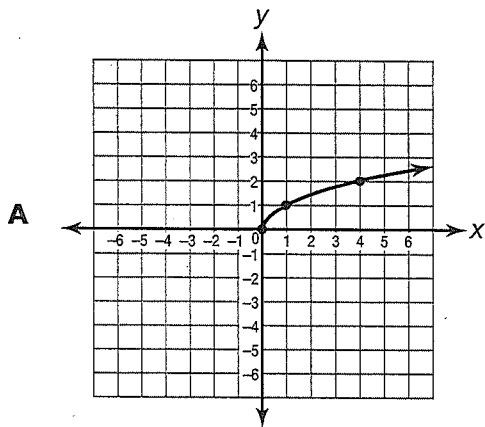
- 8 The graph of the square root function g is shown on the grid below.



Which function best represents the graph?

- A $g(x) = \sqrt{x - 5}$
 B $g(x) = \sqrt{x + 5}$
 C $g(x) = \sqrt{x - 5}$
 D $g(x) = 5\sqrt{x}$

9 Which of the following is the parent graph for the square root function family?



10 Which of the following shows the function $f(x) = x^2 - 8x + 13$ in vertex form?

- A $f(x) = (x - 4)^2 - 3$
- B $f(x) = (x - 4)^2 + 9$
- C $f(x) = (x - 8)^2 + 1$
- D $f(x) = (x - 8)^2 + 5$

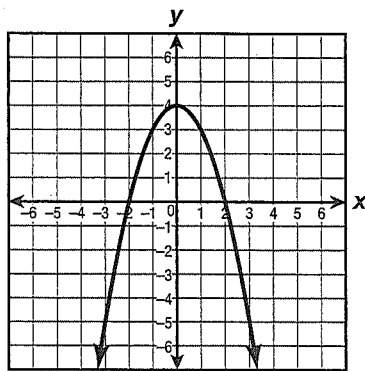
11 What are the zeros of the function $f(x) = x^2 - 6x + 13$?

- A $x = 3 + \sqrt{22}$ and $x = 3 - \sqrt{22}$
- B $x = 6 + 2i$ and $x = 6 - 2i$
- C $x = 3 + i$ and $x = 3 - i$
- D $x = 3 + 2i$ and $x = 3 - 2i$

12 What are the domain and range of the function $y = 3\sqrt{x-2} + 4$?

- A Domain: $x \geq 3$; range: $y \geq 4$
- B Domain: $x \geq 2$; range: $y \geq 4$
- C Domain: $x \geq -2$; range: $y \geq 4$
- D Domain: $x \geq -2$; range: $y \geq 0$

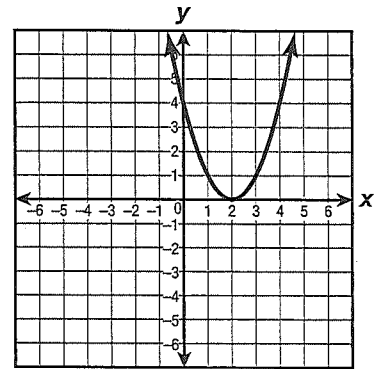
13 The graph of the quadratic function f is shown on the grid below.



Which function best represents the graph?

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

14 The graph of the quadratic function f is shown on the grid below.



What is the zero of the function?

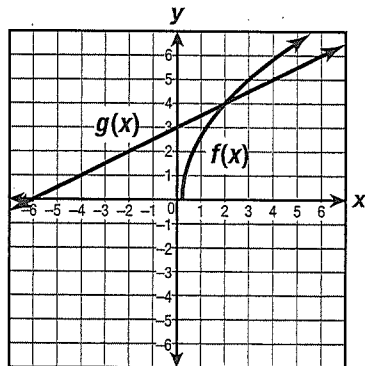
Record your answer and fill in the bubbles below.

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-	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2
	3	3	3	3	3	3	3	3
	4	4	4	4	4	4	4	4
	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6
	7	7	7	7	7	7	7	7
	8	8	8	8	8	8	8	8
	9	9	9	9	9	9	9	9

- 15 Which describes how the graph of $f(x) = \sqrt{x}$ could be transformed to form the graph of $h(x) = 7\sqrt{x}$?

- A vertical stretch by a factor of 7
- B vertical shrink by a factor of $\frac{1}{7}$
- C vertical translation 7 units up
- D horizontal translation 7 units left

- 16 The grid below shows the functions $f(x) = \sqrt{9x - 2}$ and $g(x) = \frac{1}{2}x + 3$.



What is the solution to the inequality $\sqrt{9x - 2} \leq \frac{1}{2}x + 3$?

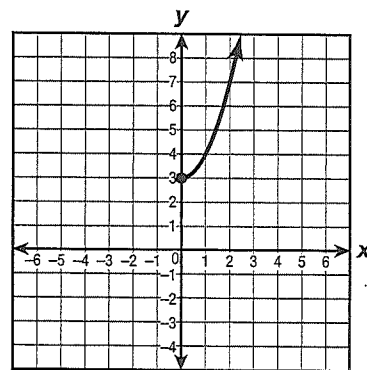
- A $x \geq 2$
- B $0 \leq x \leq 2$
- C $\frac{2}{9} \leq x \leq 2$
- D $x \leq 2$

- 17 What values of x are solutions to the quadratic equation below?

$$x^2 - 4x + 9 = 4x - 3$$

- A $x = 2$
- B $x = 2$ and $x = 6$
- C $x = 2$ and $x = -6$
- D $x = -2$ and $x = -6$

- 18 Which is the inverse of the function f graphed below?



- A $f^{-1}(x) = x^2 - 3$
- B $f^{-1}(x) = \sqrt{x - 3}$
- C $f^{-1}(x) = \sqrt{x + 3}$
- D $f^{-1}(x) = \sqrt{x} + 3$

19 The height in feet of a cannonball after it is shot from a cannon can be represented by the function $f(t) = -16t^2 + 256t + 64$, where t is the time in seconds since it was shot.

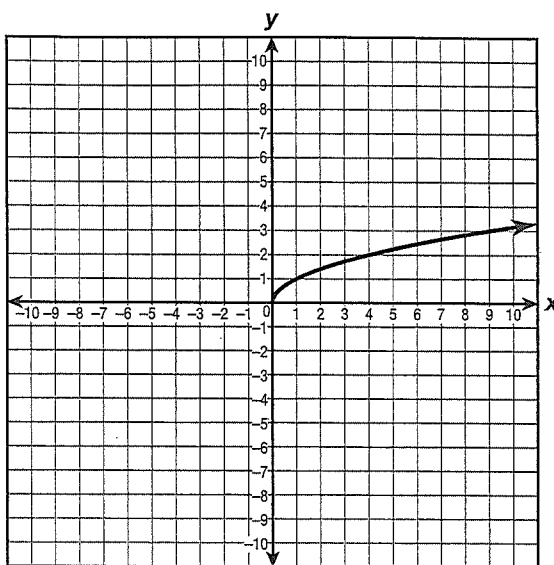
A. Use the quadratic formula to find the zeros of the function. Round your answers to the nearest tenth.

B. Explain what the solution tells you about the cannon ball. One of the answers you found in Part A is extraneous. Explain which answer is extraneous and why.

C. Find the vertex of the function.

D. What are a reasonable domain and range for this function? Explain.

- t. 20 The parent square root function, $f(x) = \sqrt{x}$, is shown on the grid below.



- A. Describe how the function $g(x) = \sqrt{x - 5} - 3$ would transform the parent graph, $f(x)$.

- B. Sketch the graph of $g(x)$ on the grid above.

- C. What are the domain and range of $g(x)$?
