A1 Test 8: Quadratics DO NOT WRITE ON THIS TEST

MULTIPLE CHOICE

→Select the *best* answer from those given, then upload your answer choice through Quizizz.com. Each multiple choice question is worth 5 points.

1. Fill in the blank to make a perfect square trinomial (i.e. complete the square):

$m^2 - 12m + \_\_\_\_\_$

A. -144 B. 144 C. -36 D. 36

2. Fill in the blank to complete the next step in solving the quadratic equation using the complete the square method:

$c^2 + 10c + 8 = 0$

$c^2 + 10c \quad = -8$

$c^2 + 10c + 25 = -8 + 25$

$(c + \_\_\_\_\_)^2 = 17$

A. 25 B. 10 C. 5 D. -5

→ For questions 3 – 6, find all solutions to the quadratic equation using any appropriate method.

3. $x^2 - 8x - 20 = 0$

A. $4 \pm 2\sqrt{5}$ B. $-4 \pm 2\sqrt{5}$ C. -10, 2 D. -2, 10

4. $x^2 - 8x - 2 = 0$

A. $4 \pm 3\sqrt{2}$ B. $-4 \pm 3\sqrt{2}$ C. $-8 \pm 3\sqrt{2}$ D. $8 \pm 3\sqrt{2}$

5. $6 - x^2 = 3x$

A. $-\frac{3}{2} \pm \frac{\sqrt{33}}{2}$ B. $\frac{3}{2} \pm \frac{\sqrt{33}}{2}$ C. $-3 \pm \frac{\sqrt{33}}{2}$ D. $3 \pm \frac{\sqrt{33}}{2}$

6. $2x^2 - 12x - 18 = 0$

A. 9, -3 B. $3 \pm 3\sqrt{2}$ C. $3 \pm 2\sqrt{3}$ D. -9, 3

7. Rename the quadratic function $f(x) = x^2 - 4x + 3$ in vertex form.

A. $f(x) = (x - 4)^2 + 3$ C. $f(x) = (x - 2)^2 + 3$

B. $f(x) = (x - 4)^2 - 1$ D. $f(x) = (x - 2)^2 - 1$

8. Rename the quadratic function $f(x) = -2(x + 4)^2 - 5$ in standard form.

A. $f(x) = -2x^2 + 16x - 37$ C. $f(x) = -2x^2 - 16x + 27$

B. $f(x) = -2x^2 + 16x + 27$ D. $f(x) = -2x^2 - 16x - 37$

9. If the quadratic function $f(x) = -3(x + 2)^2 - 10$ is graphed, the vertex will be located at…

A. (2, -10) B. (-2, -10) C. (2, 10) D. (-2, 10)

10. Find the vertex in the graph of $y = 3x^2 - 12x + 2$.

A. (2, -10) B. (-2, -10) C. (6, -34) D. (6, -106)

11. List all the ways that the graph of the parent function $y = x^2$ would be transformed to create the graph of the new function $y = -(x - 1)^2 - 5$.

A. Translated right 1 and down 5 only

B. Translated right 1 and down 5, vertically stretched (thinner shape)

C. Translated right 1 and down 5, vertically shrunk (wider shape)

D. Translated right 1 and down 5, reflected (opens down)

12. Benjamin correctly graphed the quadratic function $y = -3x^2 + 5$. Which of these is true of Benjamin's graph?

A. The graph of the function is a line.

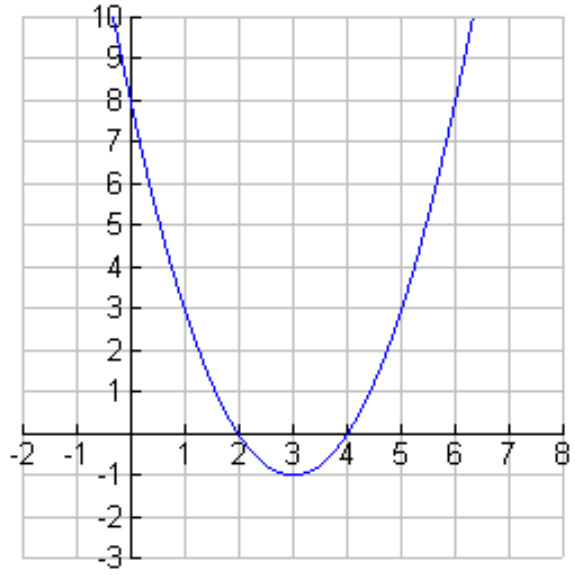
B. The graph has a vertex at (0, -5).

C. The graph has a maximum value at (0, 5).

D. The graph is much wider than the original parent function $y = x^2$.

→Use the graph shown to answer questions 13 and 14.

13. Which of these quadratic functions is shown in the graph?



A. $y = (x + 3)^2 + 1$

B. $y = (x - 3)^2 - 1$

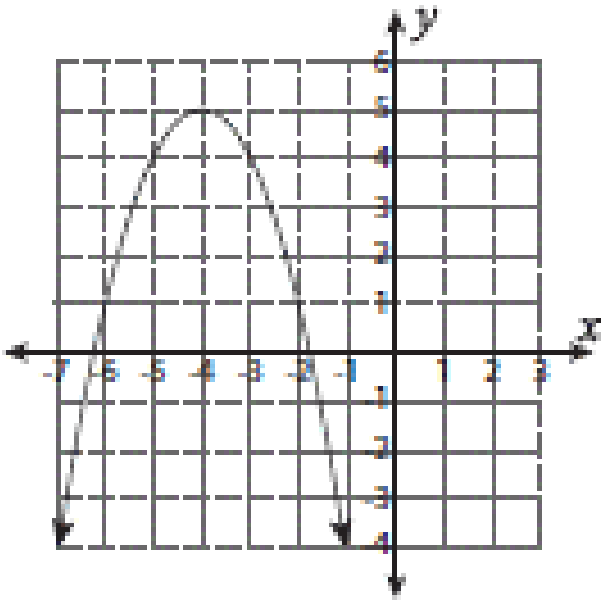
C. $y = (x + 3)^2 - 1$

D. $y = (x - 3)^2 + 1$

14. What is the equation for the axis of symmetry?

A. $x = -3$
B. $x = 3$
C. $y = 1$
D. $y = -1$

15. Which of these quadratic function is shown in the graph?



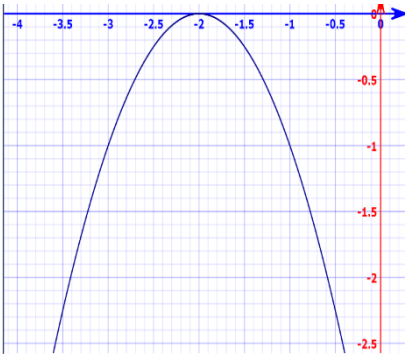
A. $y = -(x + 5)^2 + 4$

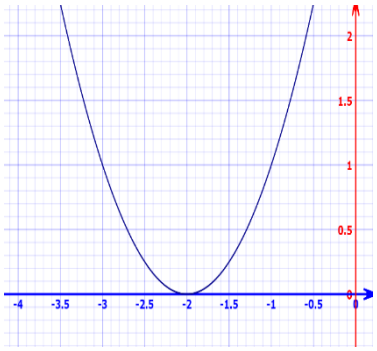
B. $y = (x + 5)^2 + 4$

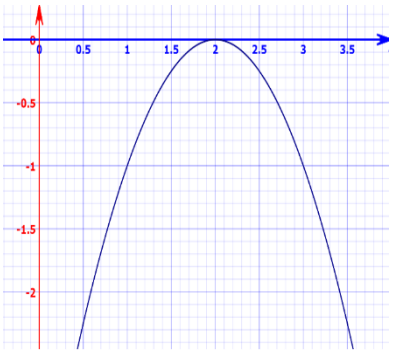
C. $y = -(x + 4)^2 + 5$

D. $y = (x + 4)^2 + 5$

16. Which of these is the correct graph of $y = -(x + 2)^2$?

A. 

B. 

C. 

D. None of These

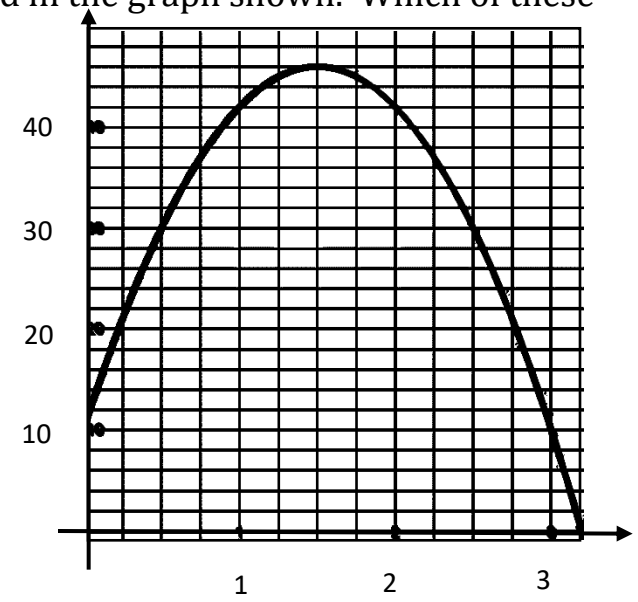
17. Scarlet made a dive off a 10-ft platform. Her height above the surface of the pool t seconds after leaving the platform can be modeled in the graph shown. Which of these statements is NOT true about Scarlet's dive?

A. After 1 second, her height is 42 meters.

B. She reaches her maximum height at 1.5

C. Her maximum height is 46 meters.

D. She hits the water at 3 seconds.



18. A soccer ball kicked off the ground has height modeled by the function $h = -t^2 + 6t$, where t is the number of seconds since the ball was kicked and h is the height in meters. What is the maximum height reached by the ball?

A. 3 meters B. 6 meters C. 9 meters D. 27 meters

A1B Test 8—Constructed Response Name_____

4/17/20 Period_____

→Select **ONE** problem, and answer it thoroughly. **Use complete sentences when explaining or justifying your solutions**. You may use a calculator for this portion of the test, but **show your work**. The constructed response is worth 10 points.

Neatly show all algebra work. Draw a box around your final answers.

Little Frufru is standing at the top of a lighthouse. She is 96 feet above the ocean. She tosses a ball into the air. The height, h, of the ball after x seconds is given by $h = -16t^2 + 64t + 96$. a. What is the ball's height after 0.5 seconds? b. How many seconds does it take to reach maximum height? What is the maximum height? c. How many seconds does it take for the ball to land in the ocean?	Use the equation $0 = 2x^2 - 12x + 16$. Use the given method to solve the quadratic equation. Show all appropriate algebra steps. a. Complete the Square method b. Quadratic Formula

Test Score:

Multiple choice points earned (90 points possible)		Constructed response points earned (10 points possible)		Test Score Earned (100 points possible)
	+		=	