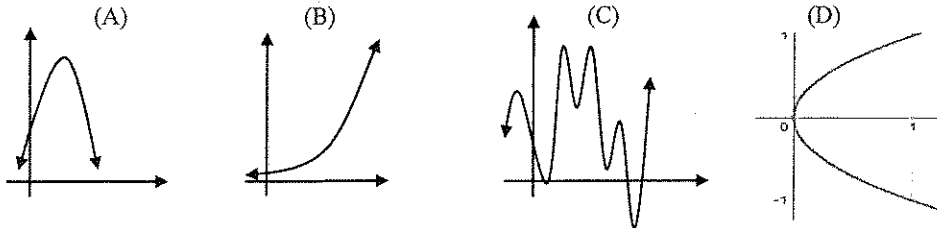


QUADRATIC FUNCTIONS TEST 8

1. Which of the following represents a quadratic function opening downwards?

- (A) $y = 3x^2(x - 1)$ (B) $y = 3x(x - 1)$ (C) $y = -3x^2(x - 1)$ (D) $y = -3x(x - 1)$

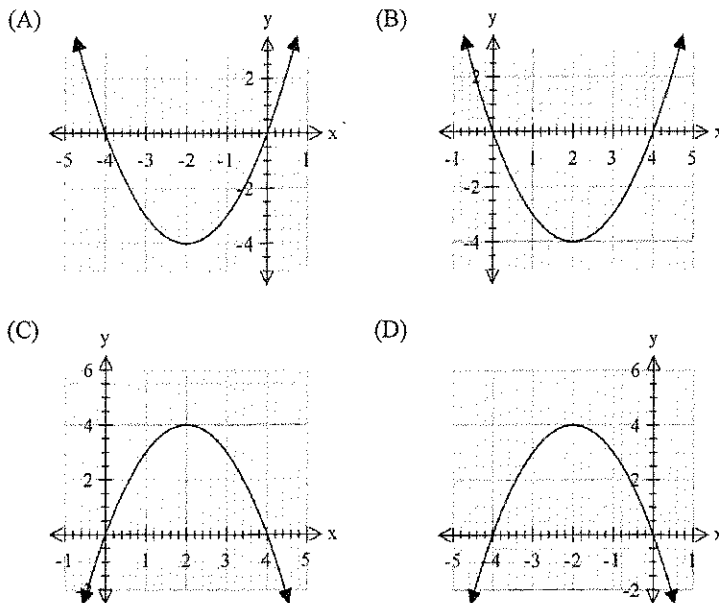
2. Which graph does NOT represent a function?



3. Which is the y-intercept for the quadratic function $y = x^2 - 2x + 10$?

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

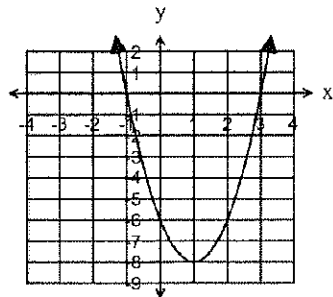
4. Which quadratic function graphed below has a vertex at $(2, -4)$?



5. What is the axis of symmetry for the quadratic function $y = -2x^2 - 8x - 5$?

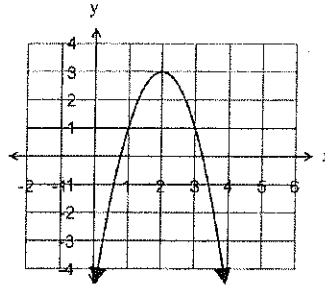
- (A) $x = 2$ (B) $x = -2$ (C) $x = 4$ (D) $x = -4$

6. What is the domain and range of the quadratic function graphed?



- (A) Domain: $\{x | -1 \leq x \leq 3; x \in \mathbb{R}\}$ Range: $\{y | y \geq -8; y \in \mathbb{R}\}$
 (B) Domain: $\{x | -1 \leq x \leq 3; x \in \mathbb{R}\}$ Range: $\{y | y \leq -8; y \in \mathbb{R}\}$
 (C) Domain: $\{x | x \in \mathbb{R}\}$ Range: $\{y | y \leq -8; y \in \mathbb{R}\}$
 (D) Domain: $\{x | x \in \mathbb{R}\}$ Range: $\{y | y \geq -8; y \in \mathbb{R}\}$

7. Which statement is correct for the function graphed below?



- (A) There is a maximum value of 3. (B) There is a maximum value of 2.
 (C) There is a minimum value of 3. (D) There is a minimum value of 2.

8. Determine the equation of the axis of symmetry for the parabola that passes through the points $(-6, 0)$ and $(4, 0)$. (A) $x = 2$ (B) $x = -2$ (C) $x = 1$ (D) $x = -1$

9. Which represents the quadratic function $y = -2(x + 1)(x - 3)$ in standard form?

- (A) $y = -2x^2 + 6$ (B) $y = -2x^2 + 4x - 6$
 (C) $y = -2x^2 - 4x - 6$ (D) $y = -2x^2 + 4x + 6$

10. Which quadratic function opens downwards and has a vertex $(0, -3)$?

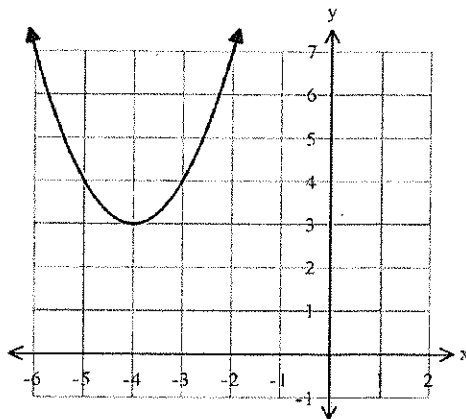
- (A) $y = (x + 3)^2$ (B) $y = -(x + 3)^2$ (C) $y = x^2 - 3$ (D) $y = -x^2 - 3$

11. What is the equation of the axis of symmetry for the function $y = -4(x - 2)^2 + 3$?

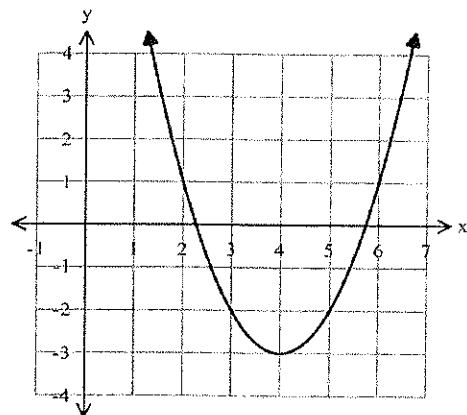
- (A) $x = -2$ (B) $x = 2$ (C) $x = 8$ (D) $x = -8$

12. Which graph represents the function $y = (x + 4)^2 + 3$?

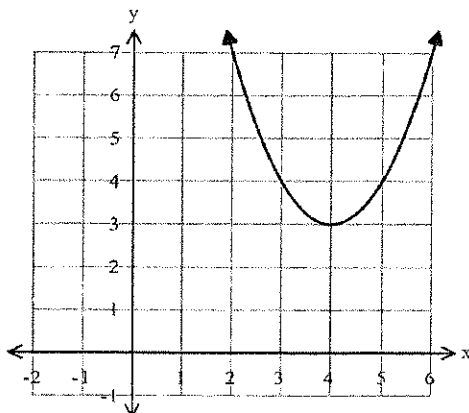
(A)



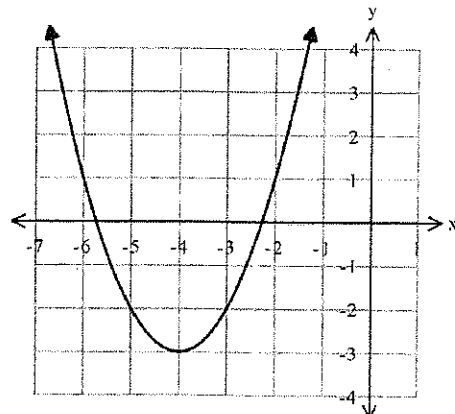
(B)



(C)



(D)



13. Which quadratic function has a minimum value of 7?

(A) $y = \frac{1}{2}(x+1)^2 + 7$ (B) $y = -\frac{1}{2}(x+1)^2 + 7$

(C) $y = \frac{1}{2}(x+1)^2 - 7$ (D) $y = -\frac{1}{2}(x+1)^2 - 7$

14. Which quadratic function has zero x-intercepts?

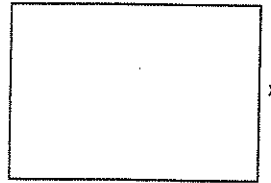
(A) $y = 3(x+4)^2 + 2$ (B) $y = 3(x-4)^2 - 2$

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

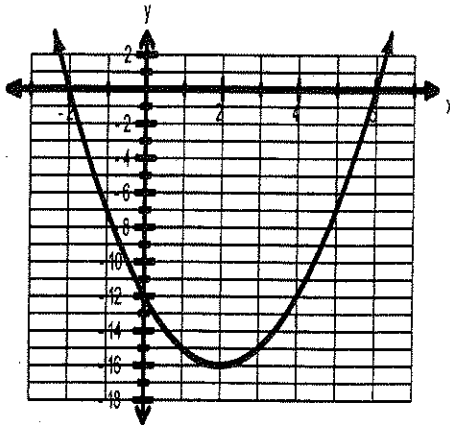
15. Mark has 40 feet of lumber to enclose a rectangular flower garden. Which function represents the area of the given flower garden, where x is the width of the garden?

(A) $A(x) = -x^2 + 40x$ (B) $A(x) = x^2 + 40x$

(C) $A(x) = -x^2 + 20x$ (D) $A(x) = x^2 + 20x$



16. Determine the following information from the graph.



a) Equation of Axis of Symmetry: _____

b) Vertex: _____

c) Maximum or Minimum Value: _____

d) Y-intercept: _____ X-intercepts: _____

e) Domain: _____ Range: _____

17.

The trajectory of a rocket is represented by the function $h(t) = -4t^2 + 16t + 20$, where h is height in meters and t is time in seconds.

(a) What is the initial height of the rocket before it takes flight?

(b) What is the height of the rocket after 3 seconds?

(c) At what time does the rocket reach its maximum height?

(d) What is the maximum height reached by the rocket?