Name: _____ Class: _____ Date: _____ ID: A

Quadratic Unit Assessment Study Guide

Multiple Choice

Identify the choice that best completes the statement or answers the question.

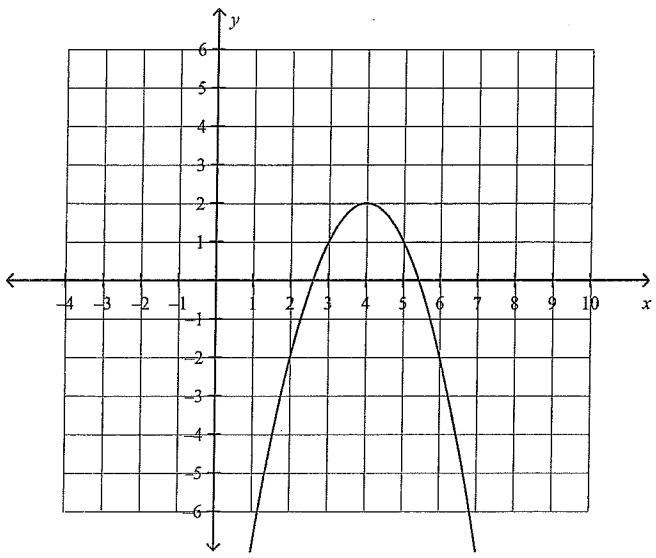
____ 1. Write as the product of two factors: $x^2 + 3x - 40$

a. $(x-5)(x+8)$
b. $(x-5)(x-8)$
c. $(x+5)(x-8)$
d. $(x+5)(x+8)$

____ 2. What is the x-coordinate of the vertex for the graph of the equation $y = \frac{2}{3}x^2 - 6x + 4$?

a. $\frac{1}{18}$
b. $\frac{1}{3}$
c. 3
d. $\frac{9}{2}$

____ 3. What quadratic function does the graph represent?

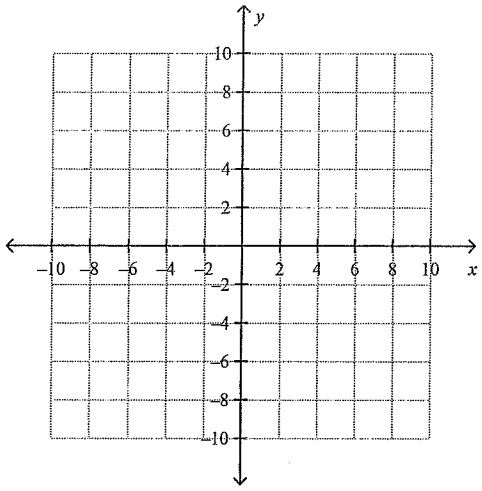


a. $f(x) = x^2 + 8x - 14$
b. $f(x) = -x^2 + 8x - 14$
c. $f(x) = -x^2 + 8x + 14$
d. $f(x) = -x^2 - 8x - 14$

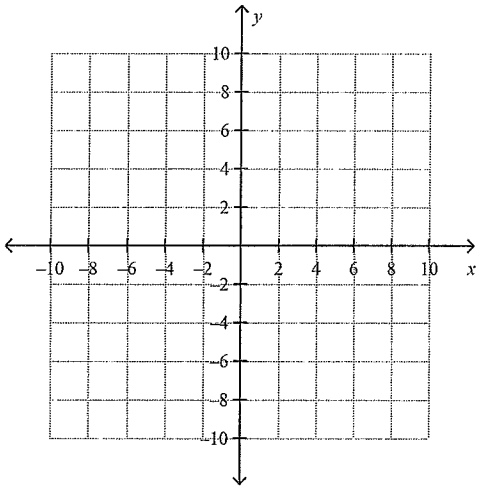
Name: _____ ID: A

Short Answer

4. Using the function $f(x) = x^2 - 5x + 10$ perform the following tasks: create a table of values (hint: should have 5 points with the vertex being the middle value), identify the vertex, what type of vertex it is, the axis of symmetry, and the facing of the parabola.

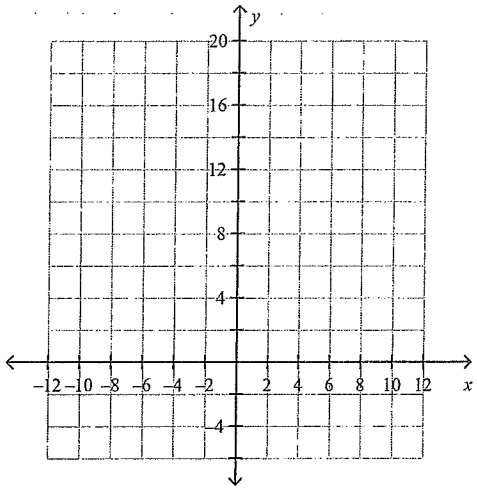


5. Using the function $f(x) = x^2 + 3x + 5$ perform the following tasks: create a table of values (hint: should have 5 points with the vertex being the middle value), identify the vertex, what type of vertex it is, the axis of symmetry, and the facing of the parabola.



6. Identify the axis of symmetry for the graph of $f(x) = x^2 + 2x - 3$.

7. Consider the function $f(x) = -4x^2 - 8x + 10$. Determine whether the graph opens upward or downward. Find the axis of symmetry, the vertex and the y-intercept. Graph the function by creating a table of values (hint: the table should have 5 points on it with the vertex being the center point).



Factor the expression.

8. $-15x^2 - 21x$

9. $8x^2 + 12x - 16$

10. $x^2 + 14x + 48$

11. $x^2 - 6x + 8$

12. $x^2 - 2x - 63$

13. $3x^2 + 26x + 35$

14. $5x^2 - 22x - 15$

15. $16x^2 + 40x + 25$

Solve the equation by either factoring or using the Quadratic Formula (Hint: not every problem can be solved by factoring)

16. $x^2 + 18x + 81 = 25$

17. $4x^2 + 28x - 32 = 0$

18. $5x^2 + 6x - 9 = 0$. If necessary, round to the nearest hundredth.

19. $x^2 + 10x + 14 = 0$

20. $x^2 + 10x + 35 = 0$

21. $-3x^2 + 7x = -5$

22. $4x^2 - x + 3 = 0$

23. $x^2 - 10x + 25 = 54.$

Find the zeros of each function.

24. $2x^2 + 7x + 3?$

25. $2x^2 + 9x + -18?$

26. $y = 5x^2 - 6x + 1?$

27. $y = 3x^2 - 8x + 4?$

28. $y = 2x^2 - 3x + 1?$

29. $k(x) = x^2 - 2x - 24.$

30. $k(x) = 2x^2 + 33x - 54.$

31. $k(x) = x^2 + 10x - 200.$

32. $f(x) = x^2 + 7x + 9.$

Find the minimum or maximum of each function.

33. $g(x) = -x^2 + 4x - 7.$

34. $g(x) = -2x^2 + 10x - 9.$

35. $g(x) = 4x^2 - 12x + 7.$

36. $g(x) = 18x^2 - 12x + 2?$

37. $g(x) = -9x^2 + 6x - 1?$