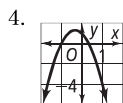
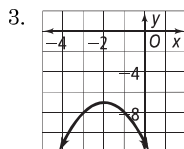
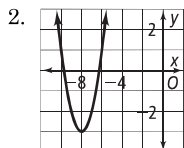
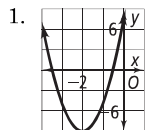


Algebra 2

Chapter 4 - Mid-Chapter Quiz Answers



5. axis of symmetry: $x = 3$; maximum is 14; domain: all real numbers; range: $y \leq 14$

6. axis of symmetry: $x = 6$; minimum is at (6, 7); domain: all real numbers; range: $y \geq 7$

7. axis of symmetry: $x = -2$; maximum is at $(-2, 1)$; domain: all real numbers; range: $y \leq 1$

8. axis of symmetry: 1; minimum is at (1, -4); domain: all real numbers; range: $y \geq -4$

9. $y = -3(x+1)^2 - 5$; vertex: $(-1, -5)$; axis of symmetry: $x = -1$

10. $-2(m^2 - 8)$

11. $-x(x - 3)$

12. $(y - 12)(y - 1)$

13. $(k - 8)(k + 3)$

14. $(2y - 3)(2y + 3)$

15. $(n - 5)^2$

16. $(2x + 3)(x + 2)$

17. $y = x^2 + 6x + 3$

18. $y = 5x^2 - 10x$

19. $y = 2(x - 1)^2 - 2$

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

21. $3x^2(x - 6)(x + 2)$; $3x^2$, x^2 , and $x + 2$ have no common factors except 1.

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

axis of symmetry: $x = 3$

Answers may vary. Sample:

If $a = -1$ then $(5, -2)$, $(1, -2)$.

23. $25x^2 - 30x + 9$ is a perfect square trinomial. The first term is $(5x)^2$. The last term is 3^2 . The middle term is negative and twice the product of $5x$ and 3: $(5x - 3)^2$.

Answers may vary. Sample:

24. $y = 2x^2$ and $y = -2x^2$

25. Standard form: $ax^2 + bx + c$

Find the x -coordinate of the vertex: $x = -\frac{b}{2a}$. Find the

y -coordinate of the vertex by solving the equation when

$$x = -\frac{b}{2a}.$$

Now that the vertex is known, write the equation in vertex form.

If the vertex is (h, k) write: $y = a(x - h)^2 + k$. To reverse the

process from vertex form to standard form, expand the squared binomial and simplify the equation.

26. If there are two x -intercepts, the x -coordinate of the vertex is the midpoint between the two x -intercepts. This is because the graph is symmetric about the vertical line passing through the vertex. If there is one x -intercept, the x -coordinate is the x -coordinate of the vertex.