Quadratic Functions Review
Review for Quiz

Solve each equation by factoring.

1. $5k^2 + 6 = 11k$

2. $49m^2 + 392 = -399m$

3. $49n^2 = -28n - 3$

4. $8x^2 = -21x - 10$

5. $18n^2 = 93n - 84$

6. $35x^2 = 26x - 3$

7. $15x^2 + 39x = -24$

8. $10n^2 + 24 = -64n$

9. $5n^2 = 4 + 19n$

10. $2b^2 = 12 - 5b$

11. $x^2 - 8 = -2x$

12. $x^2 = 10 + 3x$

13. $n^2 - 24 = 2n$

14. $8x^2 = 128$

Factor by using the distributive property.

15. $12a^3 - 18a^2 + 10a - 15$

16. $15b^3 + 35b^2 - 21b - 49$

17. $15p^3 + 20p^2 + 6p + 8$

18. $10a^3 - 15a^2 - 16a + 24$

Solve each equation by completing the square.

19. $p^2 - 10p - 37 = 2$

20. $x^2 - 16x + 21 = 6$

21. $2v^2 - 16v - 96 = 0$

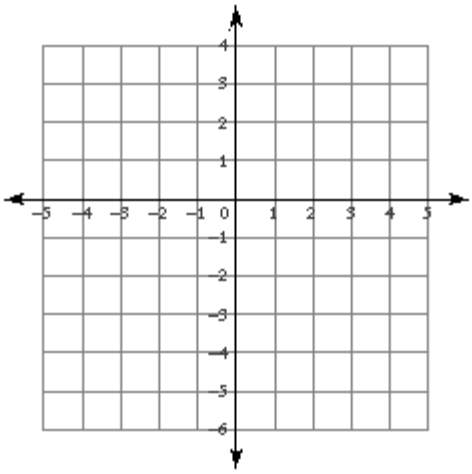
22. $9p^2 + 18p - 16 = 0$

23. $6n^2 - 4n - 15 = 7$

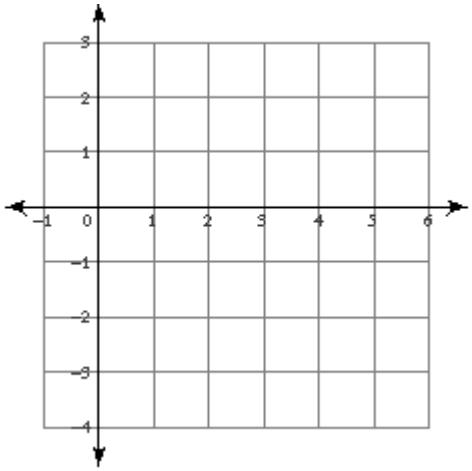
24. $5n^2 - 8n - 40 = 5$

For each function below, find the *y*-intercept, the *x*-intercept(s), and the coordinates of the vertex. Then use these points to help you graph the function.

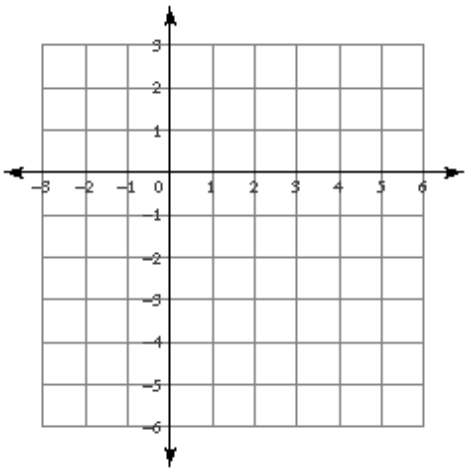
25. $y = -2x^2 - 4x + 1$



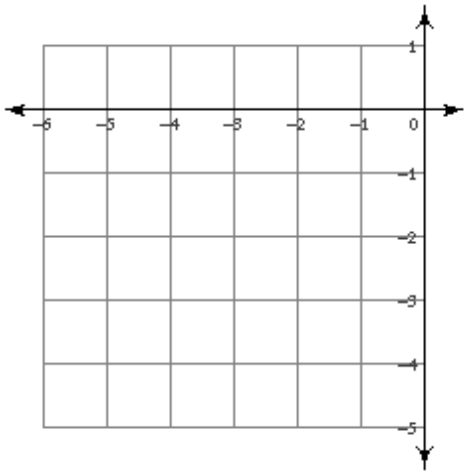
26. $y = \frac{1}{4}x^2 - 2x + 3$



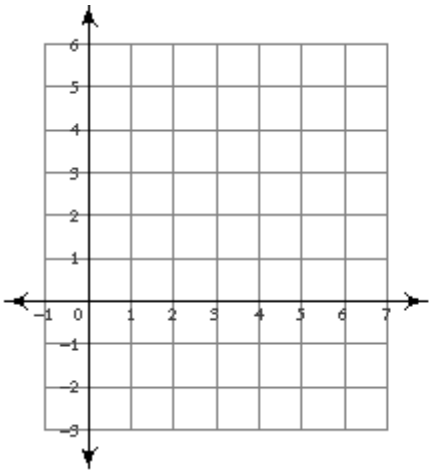
27. $y = -2x^2 + 2x + 2$



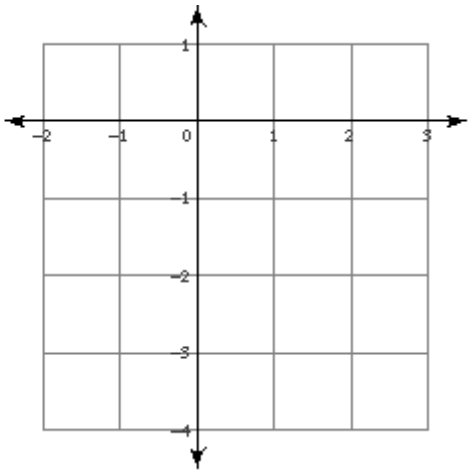
28. $y = x^2 + 5x + 2$



29. $y = 2x^2 - 14x + 22$



30. $y = -x^2 + x$



Find each product.

31. $(4n + 6)(2n - 8)$

32. $(-p - 5)(-4p - 8)$

33. $(6n + 1)(-8n^2 + 7n + 2)$

34. $(-3x - 4)(-3x^2 - 6x + 5)$

35. $(-5p^2 - 3p - 5)(-8p^2 + 2p - 1)$

36. $(5m^2 - 8m - 5)(-5m^2 - 7m + 2)$

37. The length of a rectangle is three inches more than the width. The area of the rectangle is 154 square inches. Find the width of the rectangle.

38. The area of a square is numerically 96 more than the perimeter. Find the length of the side.

39. A rock falls from a tower that is 272 feet high. As it is falling, its height is given by the formula $h = 272 - 16t^2$. How many seconds will it take for the rock to hit the ground ($h = 0$)?

40. A rock falls from a tower that is 132.3 m high. As it is falling, its height is given by the formula $h = 132.3 - 4.9t^2$. How many seconds will it take for the rock to hit the ground ($h = 0$)?