Algebra 1   Name_____

Quadratics and Rational Expression

Date_____ Period_____

Sketch the graph of each function.

1) $y = x^2 + 6x + 8$
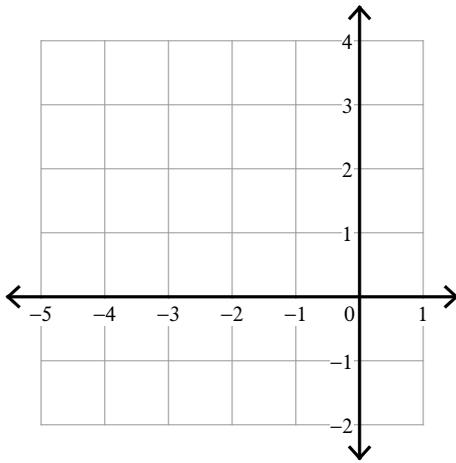
2) $y = -x^2 + 2x - 5$
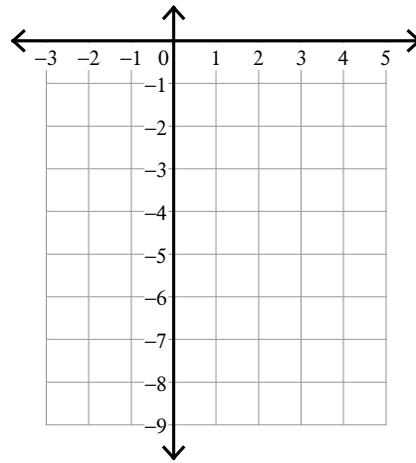
Solve each equation by factoring.

3) $n^2 + 20 = -9n$

4) $n^2 + 2 = -3n$

Solve each equation with the quadratic formula.

5) $6a^2 - 11a = 46$

6) $k^2 - 9k = 70$

Simplify each and state the excluded values.

7) $\dfrac{x^2 - 20x + 100}{x^2 - 8x - 20}$

8) $\dfrac{n^2 - 13n + 42}{n^2 - 49}$

9) $\dfrac{m^2 - 4m - 5}{10m^3 - 50m^2}$

10) $\dfrac{k^2 + 5k - 14}{k^2 + 2k - 35}$

Simplify each expression.

11) $\dfrac{n - 9}{9n^2} \cdot \dfrac{n + 5}{n^2 + n - 90}$

12) $\dfrac{n - 10}{10n^2 + 50n} \cdot \dfrac{n + 5}{n - 5}$

13) $\dfrac{n - 4}{n^2 - 8n + 16} \cdot \dfrac{n - 6}{n - 5}$