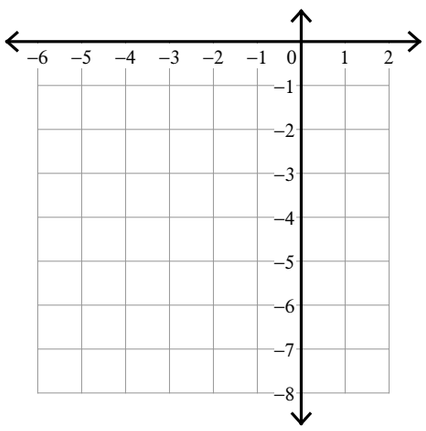
Algebra 1 Name_____

Quadratics and Rational Expression Pretest

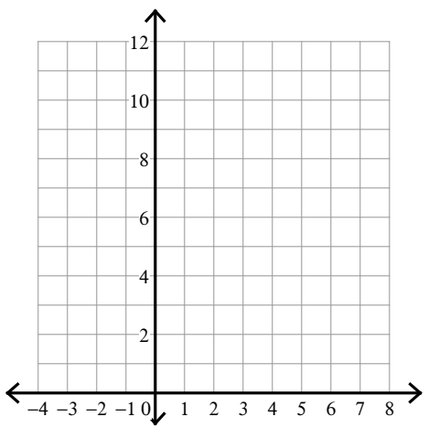
Date_____ Period____

Sketch the graph of each function.

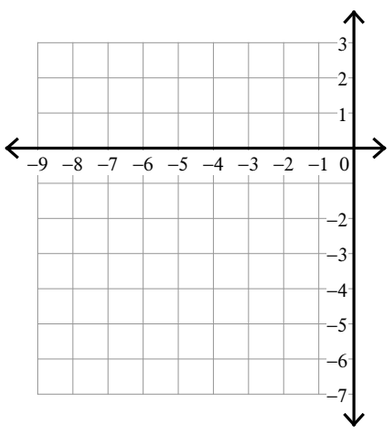
1) $y = -x^2 - 4x - 7$



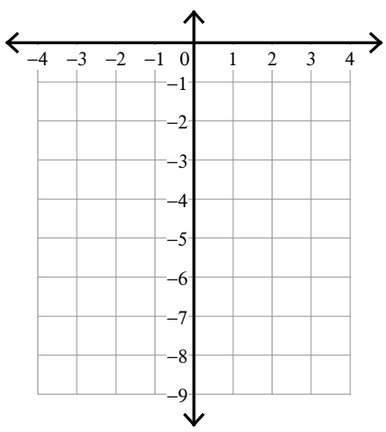
2) $y = 2x^2 - 12x + 21$



3) $y = -2x^2 - 16x - 30$



4) $y = -x^2 + 4x - 8$



Solve each equation by factoring.

5) $v^2 - 9v = -18$

6) $p^2 + 4p = -4$

Solve each equation with the quadratic formula.

7) $10v^2 - 5 = -10v$

8) $3v^2 - 15 = -8v$

Simplify each and state the excluded values.

9) $\frac{x^2 - 4x + 4}{x^2 - 4x + 4}$

10) $\frac{45 + 4n - n^2}{n^2 - 3n - 54}$

11) $\frac{10p + 12}{14p - 6}$

12) $\frac{r^2 - 12r + 35}{r^2 - 16r + 63}$

Simplify each expression.

13) $\frac{5x - 5}{x - 6} \div \frac{x^2 - x - 12}{x^2 - 10x + 24}$

14) $\frac{m^2 + m - 12}{m - 5} \div \frac{m^2 - 4m + 3}{7m - 35}$

15) $\frac{18n - 60}{n^2 - 2n - 24} \div \frac{30n - 100}{n^2 - 2n - 24}$

16) $\frac{n^2 - 15n + 54}{n^2 - 11n + 18} \div \frac{n^2 + n - 42}{9n + 63}$

17) $\frac{p^2 + 16p + 64}{7p + 56} \div \frac{3p^2 + 24p}{3p^2 + 9p}$

18) $\frac{a + 5}{2a^2 - 6a - 8} \cdot \frac{6a^2 - 40a + 64}{30a - 80}$

19) $\frac{20m^2 + 20m}{5m + 5} \div \frac{-35m^2 + 113m - 90}{35m^2 - 113m + 90}$

20) $\frac{6x + 54}{14x^2 - 70x} \div \frac{6x - 42}{14x^2 - 70x}$

21) $\frac{24x + 24}{7} \cdot \frac{1}{3x + 3}$

22) $\frac{42x + 42}{x - 8} \cdot \frac{1}{7x + 7}$

23) $\frac{40x + 24}{4} \cdot \frac{x + 7}{40x + 24}$

24) $\frac{8n}{7n^2 - 43n - 42} \div \frac{8n}{7n^2 + 48n + 36}$