

**Polynomial & Rational Functions Quiz Review**

Simplify each of the following.

1.  $\frac{x+6}{9x} \div \frac{x^2+10x+24}{2x+8}$

2.  $\frac{10p^2}{7p} \cdot \frac{30p^2-12p}{50p^3-20p^2}$

3.  $\frac{x^2+9x+8}{8x^2+8x} \div \frac{x^2+2x-48}{4x^2-24x}$

4.  $\frac{3}{6x^2+12x} - \frac{4}{2x}$

Solve each of the following. Find all real and complex zeros.

5.  $\frac{2}{k+6} + \frac{1}{k^2+7k+6} = \frac{3k-15}{k^2+7k+6}$

6.  $4x^3 - 8x^2 + x - 2 = 0$

7.  $x^3 - 1 = 0$

8.  $2x^4 - 5x^2 - 3 = 0$

Sketch a graph for the following polynomials.

9.  $f(x) = x(x-2)^2(x+4)^3$

10.  $f(x) = -x^2(x-3)(x+2)^2$