

Algebra 2  
Quiz 6.3 – 6.4 A

NAME \_\_\_\_\_  
PERIOD \_\_\_\_\_ DATE \_\_\_\_\_

Divide using Long Division.

1.  $(6x^3 + 10x^2 + x + 8) \div (2x^2 + 1)$

2.  $(x^3 - 5x^2 + 2x + 5) \div (x - 3)$

Divide using Synthetic Division.

3.  $(5x^3 - 6x^2 + 8) \div (x - 4)$

Use synthetic substitution to evaluate the polynomial for the given value. **Show all work.**

4.  $P(x) = x^3 - 7x^2 + 6x - 1$  for  $x = -2$

Determine if the given binomial is a factor of the polynomial  $P(x)$ . Show your work using synthetic division and state whether the binomial is a factor.

5.  $P(x) = 2x^3 - 8x^2 + 3x - 12$ ;  $x + 2$

Factor the following:

6.  $x^3 - 5x^2 - 4x + 20$

7.  $x^3 - 8$

8.  $9x^2 - 25$