

**Math 3**  
**Unit 3 Day 6 CW(2)**  
**Divide using long division**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

- 1)  $2x^3 - 3x^2 - 4x + 5 \div x + 1$
- 2)  $8x^2 - 26x - 9 \div 2x - 7$
- 3)  $9x^3 + 18x^2 - 4x - 10 \div x + 2$
- 4)  $x^6 - 4x^3 - 42 \div x - 1$
- 5)  $(2x^4 - 5x^3 + 2x^2 + 5x - 10) \div (x - 2)$
- 6)  $(x^3 - 4x^2 + 9) \div (x - 3)$
- 7)  $(x^4 - 2x^3 - 70x + 20) \div (x - 5)$
- 8)  $(4x^4 + 5x^3 + 2x^2 - 1) \div (x + 1)$

**Use the Remainder Theorem**

- 1) Is  $(x - 1)$  a factor of  $x^3 + 2x^2 - 2x - 1$ ?
- 2) Is  $(x + 2)$  a factor of  $4x^2 + 13x + 10$ ?
- 3) What is the remainder when  $3x^3 + 10x^2 + x - 6$  is divided by  $x + 3$ ?
- 4) Is  $(x - 2)$  a factor of  $4x^2 + 13x + 10$ ?
- 5) What is the remainder when  $3x^3 + 10x^2 + x - 6$  is divided by  $x - 1$ ?

**Find the zeros using the given information**

- 1) Find all the zeros of  $f(x) = x^3 - 4x^2 + x + 6$  given that  $x + 1$  is a factor.
- 2) Solve for all the solutions of  $2x^3 - 5x^2 + x + 2 = 0$  given that 2 is a solution.
- 3) Find all the zeros of  $g(x) = 2x^3 + 3x^2 + 8x + 12$  if  $-\frac{3}{2}$  is a root.