

Polynomials and Polynomial Functions (5.2 - 5.5, 5.8) Review

Advanced Algebra w/ Trig, Glawe

Name: _____

Date: _____ Period: _____

1) Find the sum and difference of the polynomials:

$$(x^2 + 6x + 2) + (5x^2 + 8x - 5) - (2x^2 + x - 4)$$

2) Find the product of the two polynomials:

$$(2x^2 + 3x - 4)(x - 1)$$

3) Factor the polynomial completely:

$$x^4 - x^2 - 12$$

4) Factor the polynomial completely:

$$24x^4 - 375x$$

5) Factor the polynomial completely:

$$4x^6 + 4x^3 - 8$$

6) Factor the polynomial completely:

$$x^4 - 81$$

7) Solve the polynomial:

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

8) Solve the polynomial:

$$27x^4 = 64x$$

9) Divide using polynomial long division:

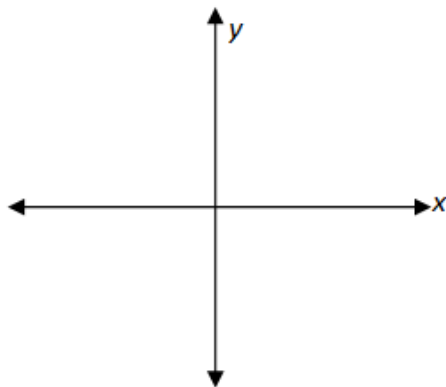
$$(x^3 + x^2 + 5x - 4) \div (x + 2)$$

10) Given that $(x + 9)$ is a factor of the polynomial $f(x) = x^3 + 2x^2 - 51x + 108$, factor completely.

11) Divide the following polynomials: $(4x^4 - 5x - 4) \div (x - 2)$

Sketch the graph of the polynomial using the end behavior, x-intercepts and y-intercept. Be sure to label your graphs.

11) $f(x) = -\frac{1}{4}(x - 2)^3(x - 1)(x + 2)^2$



12) $f(x) = 2x(x - 3)(x + 1)$

