Alg2 Unit 1 HW #11 Name:_____ Period: _____

1. Find the product. $\frac{x^2-4}{x^2-11x+18} * \frac{x^2-5x-36}{x^2-x-20}$

2. Divide using the method of your choice. $(18x^3 + 9x^2 - 11x + 1) \div (6x + 1)$

3. Given the equation and factor, find the roots. $f(x) = x^3 + x^2 + 11x - 13$ Factor is $(x - 1)$

4. Write an equation of a polynomial whose solutions are $x = 3i$ and $x = -2$ and that passes through $(1, -5)$.

5. Factor.
   a. $4x^2 + 5x - 6$ b. $x^2 - 10x + 24$ c. $16x^2 - 9$

Simplify.

6. $-2i(5i - 12)$

7. $\sqrt{-225}$

8. Perform the indicated operation, put the polynomial in descending order, and then fill in the blanks below.

$$(2 + 3x^2 - 6x)(2 + x)$$

Descending order:

Degree:

Leading coefficient:

Circle One: Monomial Binomial Trinomial Polynomial

9. Write an example of a polynomial <u>equation</u> with an even degree and whose graph would end pointing upwards.

10. What are the end behaviors of the following polynomial?

$$y = 2x^5 - 5x^2 + 3x - 11$$

End behaviors: L: R:

11. Sketch a polynomial with a degree of 8, 2 real roots, and a negative leading coefficient

a. # Imaginary roots:

b. # Relative minimum(s):

c. # Relative maximum(s):