Alg2 Unit 1 HW #13 Name:_____ Period: _____

1. Simplify.

a. $\frac{14x^2-19x-3}{49x^2-1}$

b. $\frac{20x-25}{3x-39} * \frac{x^2-10x-39}{10x+30}$

2. Solve. $4\sqrt{1-5x} - 14 = 10$

3. Given $y = x^3 + 3x^2 + 2x + 6$, use your graphing calculator to find the following:

a. # of real roots _____ Name them:

b. # of imaginary roots _____ Name them:

c. # of relative minimums _____ Name them:

d. # of relative maximums _____ Name them:

4. Solve by factoring.

a. $3x^2 - 4x - 15 = 0$

b. $21x - 18x^2 = 0$

c. $169x^2 - 36 = 0$

5. Divide using Long Division or Tabular Division. If there is no remainder, solve to find all roots. If there is a remainder, use the Remainder Theorem to prove your answer.

$$\frac{6x^3+17x^2-2}{2x-1}$$

Solve for roots or prove answer:

6. Divide using Synthetic Division. If there is no remainder, solve to find all roots. If there is a remainder, use the Remainder Theorem to prove your answer.

$$(x^3 - 15x - 18) \cdot (x+3)^{-1}$$

Solve for roots or prove answer: