Name: _____ Algebra II Honors - 3.3 Practice

1. Given: $f(x) = -8x^3 - 32x^2 - 42x - 18$

   a) If (x+1) is a factor , find all zeros.

   b) Find the quotient of f(x) and (x-1). Verify the remainder is correct.

   c) Write f(x) as: d(x)q(x) + r(x)

   d) Sketch f(x).

2. Find $f(\sqrt{2})$, given $f(x) = x^4 - 3x^3 + x - 1$, using synthetic division .

3. Divide using long division. $\dfrac{x^4+9x^3-5x^2-36x+4}{x^2-4}$.

Explain why and how synthetic division could be used to divide the above.

4. Divide: $\dfrac{x^{3n}-3x^{2n}+5x^n-6}{x^n-2}$

5. Given: $f(x)=x^4-4x^3+13x^2-36x+36$.

a) If "2" is a double zero, find all other zeros and factor f(x).

b) Sketch f(x).