Math Analysis Name_____

HW #39 Example - Advanced Polynomial Equations Date_____ Period____

Evaluate each function at the given value using sythetic division.

1) $f(m) = 4m^5 + 10m^4 + 2m^3 + 4m$ at $m = -2$

State the possible number of positive and negative zeros for each function.

2) $f(x) = 5x^5 - 10x^4 + 3x^3 - 6x^2 - 14x + 28$

Use synthetic divison and the rational root theorem to find all the roots of the given polynomial.

3) $f(x) = 2x^3 + 11x^2 + 7x - 20$

4) $f(x) = 9x^4 - 6x^3 - 59x^2 - 16x + 12$

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State the possible number of positive and negative zeros for each function.

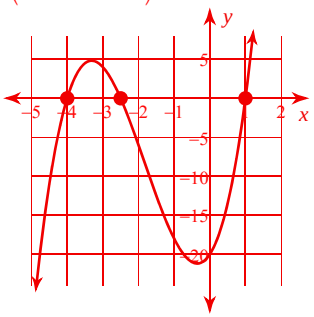
2) $f(x) = 5x^5 - 10x^4 + 3x^3 - 6x^2 - 14x + 28$

Possible # positive real zeros: 4, 2, or 0
Possible # negative real zeros: 1

Use synthetic divison and the rational root theorem to find all the roots of the given polynomial.

3) $f(x) = 2x^3 + 11x^2 + 7x - 20$

$\left(-4, -\frac{5}{2}, 1\right)$



4) $f(x) = 9x^4 - 6x^3 - 59x^2 - 16x + 12$

$\left(-2, -\frac{2}{3}, \frac{1}{3}, 3\right)$