Trig/PreCalc Review Sec 2.4

Use long division to divide f(x) by d(x), and write your answer in polynomial and factored form.

1) $f(x) = x^3 + 6x^2 + 9x + 3;\ d(x) = x + 5$

2) $f(x) = x^4 - 2x^3 + 6x^2 - 4x + 10;\ d(x) = x^2 - 2x + 5$

Divide using synthetic division, and write a summary statement in fraction form.

3) $\dfrac{2x^3 + 3x^2 + 4x - 10}{x + 1}$

4) $\dfrac{3x^5 + 4x^4 + 2x^2 - 1}{x + 2}$

Find the remainder when f(x) is divided by (x – k)

5) $f(x) = 2x^3 + 2x^2 + 3x + 4;\ k = -2$

6) $f(x) = 5x^4 + 4x^3 + 3x^2 - 4x + 69;\ k = 2$

7) $f(x) = x^5 + 4x^4 - 5x^3 + 2x^2 - 4x - 7;\ k = 3$

Use the Factor Theorem to determine whether the first polynomial is a factor of the second polynomial.

8) $x + 4;\ 8x^4 + 33x^3 - 4x^2 + x + 4$

9) $x + 2;\ 6x^3 + 9x^2 - 5x + 2$

10) $x + 5;\ 6x^3 + 28x^2 - 11x + 5$

Use the graph to guess possible linear factors of f(x). Then completely factor f(x) with the aid of synthetic division.

11) $f(x) = 5x^3 + 33x^2 + 31x - 69$