AA6-6 Name _____

Remainder Theorem

Check for understanding:

1. $P(x) = x^3 - 3x^2 - 7x + 9$

   a. Divide $P(x) = x^3 - 3x^2 - 7x + 9$ by (x-5)

   b. Find P(5)

   c. Write the partially factored form: P(x) =

   d. Is (5,0) a root of P(x)?

2. $P(x) = x^3 + 6x^2 + 5x - 6$. Is (-2,0) a root of P(x)?

   a. Divide

   b. Find P(-2)

   c. Write the partially factored form: P(x) =

   d. Is (-2,0) a root of P(x)?

Practice: C-Level

Use <u>both methods</u> to answer each question. Then, write the equation in partially factored form.

1) Determine if (3,0) is a root of $P(x) = 2x^3 - 7x^2 + 6x - 3$

2) Determine if (x+2) is a factor of $f(x) = x^3 - 5x^2 + 7x - 2$

3) Determine if (2,0) is a root of $P(x) = 2x^3 - 3x^2 + 2x - 3$

B-Level

4) Determine if there is a root at $x = -2$ of $P(x) = x^4 + 3x^3 - 9x - 10$

5) Determine if $(x-1)$ is a factor of $P(x) = 4x^3 - 5x + 6$

6) Determine if there is a root of f(x) at x = -1. $f(x) = 3x^5 - 4x^4 - 2x^3 + 5x^2 + x - 1$.