Pre-Calculus 30 Outcome 3a Assessment 3

30.10	2	3	4
Outcome 3a: I can demonstrate understanding of polynomials and polynomial functions of degree higher than 2 by factoring	Divide a polynomial by x-a using either long division or synthetic division. Use the remainder theorem to determine the remainder Use the factor theorem to determine if x-a is a factor of P(x) Identify the degree, leading coefficient, and constant of each polynomial function.	Demonstrate the process of Factoring polynomials of degree 2 and higher using the factor theorem	Fully factor polynomials of degree 2 or higher without error. Solve problems

Level 2

1. Divide using long division or synthetic division.
   a) $5x^4 + 12x^3 - 21x^2 - 40x - 12$ divided by $x + 3$

2. Determine the remainder when $2x^3 + 3x^2 - 17x - 30$ divided by $x - 2$ using the remainder theorem.

3. From question #1, is $x + 3$ a factor of $5x^4 + 12x^3 - 21x^2 - 40x - 12$? Cleary state why or why not.

Level 3

4. Factor the following:

a) $x^3 - 8x^2 + x + 42$

b) $x^3 - 5x^2 - 2x + 24$

Level 4

5. Find the value of k when $(kx^3 - 4x^2 - 5x + 8) \div (x - 2)$ has a remainder of -2