PreCalculus 12 – Homework Quiz Questions (Chapter 1)

A1. Use long division to divide $2x^3 - x^2 - 13x - 6$ by $x - 6$. Write the division statement.

B1. Use synthetic division to divide $x^5 - 4x^3 + 2x^2 + x + 6$ by $x + 3$. Write the division

statement.

A2. Use long division to divide $x^4 + 3x^3 - x + 8$ by $x + 2$. Write the division statement.

B2. Use synthetic division to divide $2x^4 - x^3 - 55x^2 + 126x - 72$ by $x - 4$. Write the division statement.

C1. Use the Remainder Theorem to determine the remainder when $-3x^3 + 2x^2 + x - 7$ is divided by $(x + 2)$.

D1. Use the Factor Theorem to determine one factor of the polynomial $2x^3 + 3x^2 - 5x + 12$.

E1. Factor $2x^3 - x^2 - 11x + 10$ completely.

A3. Use long division to divide $2x^3 - 3x^2 - 8x + 15$ by $x - 1$. Write the division statement.

B3. Use synthetic division to divide $3x^3 - 7x - 9$ by $x - 2$. Write the division statement.

C2. Use the Remainder Theorem to determine the remainder when $2x^4 - x^3 - 2x^2 + 3$ is divided by $(x - 3)$.

D2. Use the Factor Theorem to determine one factor of the polynomial $4x^3 - 16x^2 - x + 4$.

E2. Factor $x^4 + x^3 - 7x^2 - x + 6$ completely.

F1. State the degree, type (e.g. linear), leading coefficient, and y-int. of $y = 3x^3 - 4x^2 + x - 5$.

G1. Sketch the graph of the function $y = x^4 - 5x^3 + 5x^2 + 5x - 6$ using a table of values.

F2. State the degree, type, leading coefficient, and y-int. of $y = 4x^2 - x^4 + 2x^3 + x + 3$.

G2. Sketch the graph of the function $y = -x^4 - 5x^3 - 5x^2 + 5x + 6$ using a table of values.

H1. Using the zeros and y-intercept, sketch the graph of $y = x^3 - 2x^2 - 5x + 6$.

I1. Determine the zeros of $y = (x-1)(x+1)^2(x-3)$. State the multiplicity of each zero and sketch a graph to show the behaviour at those points.