Math 1210 Tutorial #4 (Oct. 6 – Oct. 12)

- 1. If -2 + 3i is a zero of the polynomial $x^4 + 2x^3 + 10x^2 6x + 65$, find its other zeroes.
- 2. Find the value(s) of k so that 4k is the remainder when $x^3 + k^2x^2 4x + 1$ is divided by x + 2.
- 3. Find the value(s) of k and h in order that both x+1 and x-3 be factors of the polynomial $x^4 + kx^3 + hx^2 16x 24$.
- 4. For the polynomial $2x^5 5x^4 8x^3 6x^2 + 6x + 5$:
- (a) use Descartes' rules of signs to state the number of possible positive and negative zeros of the polynomial;
- (b) use the bounds theorem to find bounds for zeros of the polynomial;
- (c) use the rational roots theorem to list all possible rational zeroes of the polynomial, taking into account the results of (a) and (b).
- 5. Find all solutions of the equation $x^3 7x^2 + 17x 14 = 0$ given that it has a solution which is an integer.