

Pencils and Erasers Only – No Calculators Needed.

- 1 Use polynomial long division to find the quotient and remainder on division of

$$P(x) = 10x^4 - 15x^3 + 14x^2 + 11x - 19$$

by $2x^2 - 3x + 4$.

So that $\frac{P(x)}{2x^2 - 3x + 4} =$

- 2 Use synthetic division to find the quotient and remainder on division of

$$P(x) = 10x^4 - 15x^3 + 14x^2 + 11x - 19$$

by $(x - 2)$.

3 Let $P(x) = 3x^5 - 14x^4 - 14x^3 + 36x^2 + 43x + 10$.

(a) Write down the “Rat Can List” for this polynomial. That is, list all possible rational zeros of this polynomial given by the Rational Zeros Theorem.

(b) Show that $x = -1$ is a zero of multiplicity two for this polynomial.