Pre-Calculus 30 Name: _____
Checkpoint 1: Polynomials 3.1-3.5

1. Create a polynomial that satisfies the following characteristics.

Polynomial	End Behaviour
	From Quadrant III to Quadrant IV
	From Quadrant III to Quadrant I

2. Given the following polynomials, fill in the chart.

Polynomial	Degree	Leading Coefficient	End Behaviour
$3-2x^2+4x$			From Quadrant ____ to Quadrant _____
$3x^3+2x^2-x+5$			From Quadrant ____ to Quadrant _____
$-2x^2+5x^4+x-8$			From Quadrant ____ to Quadrant _____
$x^3-x^5-2x^2+5$			From Quadrant ____ to Quadrant _____

3. Determine the remainder if $P(x)=x^3+3x^2-4x+4$ is divided by $x-2$.

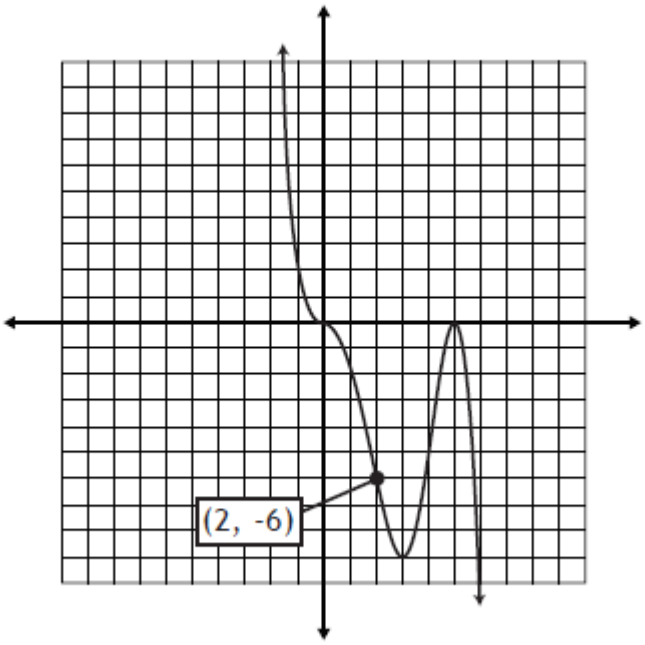
4. When the polynomial $P(x) = 3x^4 - 2x^3 + kx - 1$ is divided by a binomial the following is true, $P(2) = 41$. Determine the value of *k*.

5. Completely factor $P(x) = 3x^4 + 20x^3 + 35x^2 + 10x - 8$, show all work.

6. The polynomial $P(x) = x^4 - 3x^3 + 3x^2 + mx + 2$ is divided by the factor $x - 1$, determine all the other factors of $P(x)$

7. Determine the polynomial functions corresponding to the following graphs. Leave your answers in factored form.

a)



b)