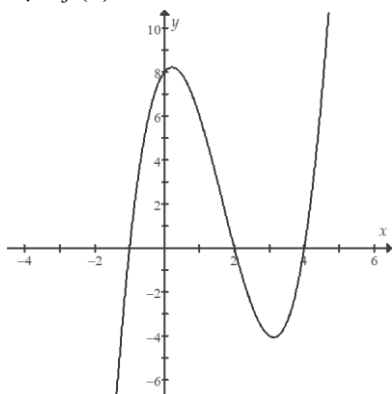


Name: _____

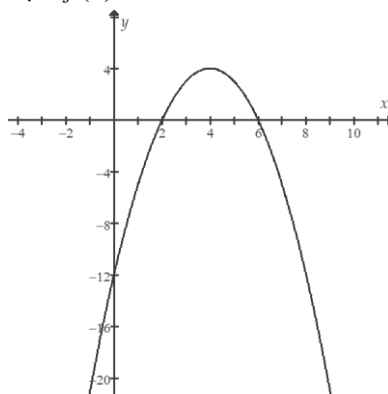
Zeros of Polynomial Functions

- 1) Solve the equation $f(x) = x^4 - 29x^2 + 100 = 0$
- 2) 1) Find all the factors of $p(x) = 6x^3 - 17x^2 + 11x - 2$
 - 2) Hence find all the solutions to $6x^3 - 17x^2 + 11x - 2 = 0$
- 3) The function f is defined by $f(x) = x^3 - 7x - 6$
 - 1) Use the factor theorem to show that $(x-3)$ is a factor of $f(x)$
 - 2) Write $f(x)$ in the form of $f(x) = (x-3)(ax^2 + bx + c)$
 - 3) Solve $f(x) = 0$
 - 4) Use your solution to $f(x) = 0$ to write down the solutions to the equation $f(x+1) = 0$
- 4) Determine graphically the real zeros of the polynomial functions

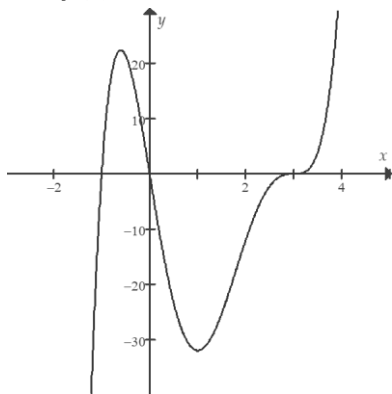
1) $f(x) = x^3 - 5x^2 + 2x + 8$



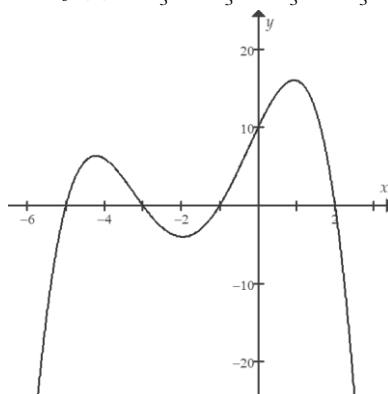
2) $f(x) = -x^2 + 8x - 12$



3) $f(x) = 2x^5 - 16x^4 + 36x^3 - 54x^2$



4) $f(x) = -\frac{1}{3}x^4 - \frac{7}{3}x^3 - \frac{5}{3}x^2 + \frac{31}{3}x + 10$



- 5) Show that $(x - 2)$ is a factor of $x^3 + 2x^2 - 5x - 6$, and find the other two factors
- 6) Show that $(x - 3)$ is a factor of $2x^3 - 3x^2 - 8x - 3$, and find the other two factors