Write an equation for the linear function f in point-slope form, standard form, and slope-intercept form.

$$f(-1) = -6 \; and \; f(2) = 9$$

Put the function into vertex form by completing the square then use the quadratic formula to find the x-intercepts

$$f(x) = 2x^2 + 8x - 6 = 0$$

Put the function in vertex form without completing the square. Find the x-intercepts without using the quadratic formula.

$$f(x) = 3x^2 - 12x + 4$$

Write an equation for the quadratic function that contains the given vertex and point.

Vertex (4, -1) Point (3, 2)

Describe how to transform the graph of an appropriate monomial function $f(x) = x^3$ onto the given polynomial function. Then find the y-intercept of the function.

$$g(x) = -\frac{5}{8}(x-3)^3 + 4$$

Describe the end behaviors of the polynomial function.

$$g(x) = -x^5 - 3x^3 + x^2 - 10$$

Find the zeros of the function algebraically.

$$f(x) = 3x^3 + 4x^2 - 15x$$

Give the degree of the polynomial. Find the zeros of the polynomial function and state the multiplicity of each. Then determine if the graph crosses the x-axis or touches at any of the zeros.

$$g(x) = 8x(x-3)^4(x+7)^5$$

Find the cubic function with the given zeros.

X= -3, -1, 8

Find the average rate of change for the function $\mathrm{f(x)} = 4x^2 - 5$ on the interval $[-3, b]$.