L.G: "I can sketch the graph of a polynomial function given in factored form using its key features as well as determine the equation of a polynomial given its graph."

1. Draw a sketch of each graph using the properties of polynomial functions.

a) $f(x) = (x - 4)(x + 3)$ b) $f(x) = -(x - 1)(x + 4)(x - \frac{1}{2})$ c) $f(x) = (2x - 1)(x + 1)^{2}$ c) $f(x) = (2x - 1)(x + 1)^{2}$ c) $f(x) = 2x(x - 2)^{3}$ c) $f(x) = 2x(x - 2)^{3}$ c) $f(x) = 2x(x - 2)^{3}$ c) $f(x) = x(x - 2)(x + 1)(2x + 3)$ c) $f(x) = x(x - 2)(x + 1)(2x + 3)$ c) $f(x) = x^{3}(x - 4)$ c) $f(x) = x$			0
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	a) $f(x) = (x - 4)(x + 3)$	b) $f(x) = -(x - 1)(x + 4)(x - \frac{1}{2})$	c) $f(x) = (2x - 1)(x + 1)^2$
c) $f(x) = 2x(x-2)^3$ $f(x) = 2x(x-2)^3$ f(x) = x(x-2)(x+1)(2x+3) f(x) = x(x-2)(x+1)(x-3)(x+4) f(x) = x(x+2)(x-1)(x-3)(x+4) f(x) = x(x+2)(x-1)(x-3)(x+4)		$\begin{array}{c} & & & & & \\ & & & & & \\ & & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & \\ & &$	
$g) f(x) = x^{3}(x-4) + \frac{1}{2} + \frac{1}{3} + \frac$	c) $f(x) = 2x(x-2)^3$	d) f (x) = - $(2x - 3)^2(x + 2)^2$	f) $f(x) = x(x - 2)(x + 1)(2x+3)$
g) $f(x) = x^{2}(x-4)$ h) $f(x) = -(x+3)^{2}(x-3)^{3}$ h) $f(x) = x(x+2)(x-1)(x-3)(x+4)$ h) $f(x) = -(x+3)^{2}(x-3)^{3}$ h) $f(x) = x(x+2)(x-1)(x-3)(x+4)$ h) $f(x) = x(x+2)(x-1)(x-3)(x-4)(x-4)$ h) $f(x) = x(x+2)(x-4)(x-4)(x-4)(x-4)(x-4)(x-4)(x-4)(x-4$		$\begin{array}{c} & & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & & \\ & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ &$	
$\begin{array}{c} & & & & & & & & & & & & & & & & & & &$	g) $f(x) = x^3(x-4)$	h) f (x) = $-(x + 3)^{2}(x - 3)^{3}$	i) $f(x) = x(x+2)(x-1)(x-3)(x+4)$
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- 2. a) When does a turning point occur on the x axis?
 - b) When does a point of inflection occur on the x-axis?
- 3. Is it possible:
- a) for a cubic function to have no zero?