6.8 / 6.9 Graphing and Writing Polynomial Functions

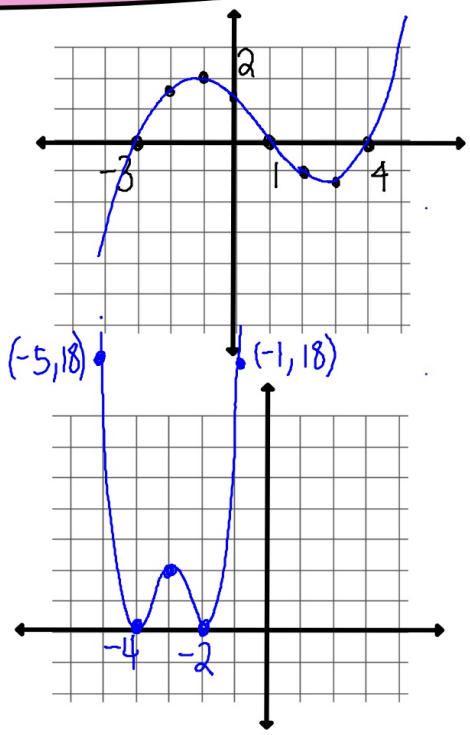
ex 1 $y = \frac{1}{10}(x+3)(x-1)(x-4)$

zeros $-3, 1, 4$

x	−3	−2	−1	0	1	2	3	4		
y	0	1.8	2	1.2	0	−1	−1.2	0		

$y = 1/10(1)(-3)(-6)$

$y = 1/10(2)(-2)(-5)$



ex 2 $y = 2(x+2)^2(x+4)^2$

zeros $-2, -4$

x	−4	−3	−2	−5	−1					
y	0	2	0	18	18					

$y = 2(1)(9)$

ex 3 Write a cubic equation in the form $f(x) = a(x-r_1)(x-r_2)(x-r_3)\ldots$ if (-3, 0), (-1, 0), (-2, 1), and (3, 0) are on the graph.

r_1, r_2, r_3

$(x, f(x))$

$1 = a(-2-(-3))(-2-(-1))(-2-3)$

$1 = a(1)(-1)(-5)$

$1 = 5a$

$\frac{1}{5} = a$

$f(x) = \frac{1}{5}(x+3)(x+1)(x-3)$