3.7 Families of Quadratic Functions

Date: _____

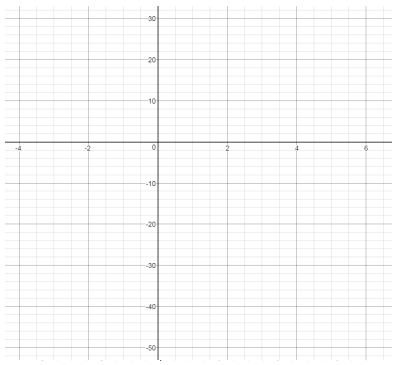
For the next 15 minutes, with a partner, work on p. 187 A - J

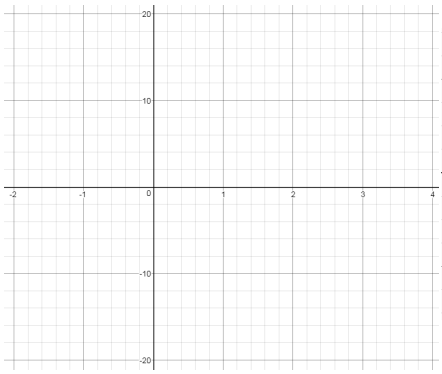
Use desmos on your Chromebook!

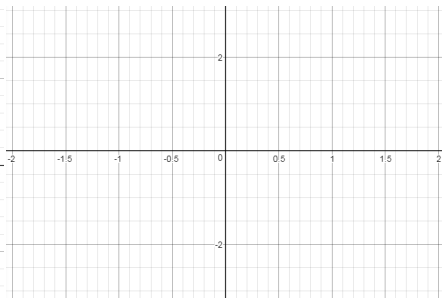
INVESTIGATE the Math

Equations that define quadratic functions can look quite different, yet their graphs can have similar characteristics.

Group 1	Group 2	Group 3
$f(x) = x^2 - 3x - 10$	$m(x) = -2x^2 + 4x + 1$	$r(x) = -3x^2 + 5x - 2$
$g(x) = -2x^2 + 6x + 20$	$n(x) = 0.5x^2 - 1x + 3.5$	$s(x) = 2x^2 + x - 2$
$h(x) = 4x^2 - 12x - 40$	$p(x) = -6x^2 + 12x - 3$	$t(x) = 7x^2 - 2x - 2$
$k(x) = -0.5x^2 + 1.5x + 5$	$q(x) = 10x^2 - 20x + 13$	$u(x) = -4x^2 - 4x - 2$







Summary of Invesgaon (p. 187):

Today's Learning Goal(s):

By the end of the class, I will be able to:

a) understand the properties of families quadratic functions.
b) write a quadratic equation that represents a family of curves.
c) find a specific member of a family of curves.

3.7 Families of Quadratic Functions

Date: _____

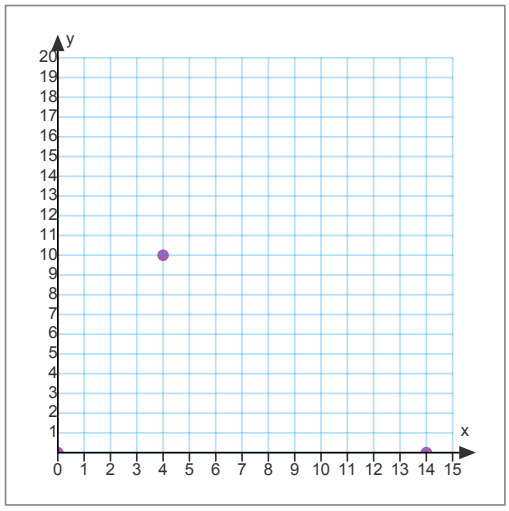
Ex.1: Determine the equation of the quadratic function that passes through $(-3, 20)$ if it's zeros are 4 and -1.

(working backwards)

$f(x) =$ is the equation of the parabola. f

Ex.2: A tunnel with a parabolic arch is 14m wide. The edge of the arch is at the origin, and a point 4 m from the edge of the arch is 10m high.

a) What is the equation of the parabola?



$y =$

$f(x) =$ is the equation of the parabola.

b) Will a truck that is 12 m high and 4 m wide fit under the arch? Justify your answer.

Today's Homework Practice includes: **SWYK 3.2 Monday** READ pp. 188-191
p. 192 #1 – 3, 4ac, 5ac, 6, 8, 10