

Roberta Parks
Math Instructional Specialist
Institute for Math and Science Education
UA Fort Smith
rparks@uafortsmith.edu

Matching Graphs Games Quadratic Graphs

This is a group activity that works well with groups of three or four. There are 8 of each type of card, each with a different color. One type of card is an equation card. Another type of card has the graph for each equation. Other cards have information that is needed to make the graph, such as the vertex. Each group should get a set of cards which they will sort into piles of cards which match to a graph. After the cards have been sorted I give each group one blank information sheet to fill in. This makes it easier to check that they have sorted the cards correctly.

This is a good activity to do to help students see the connection between graphs and equations. I usually do this activity after students have learned how to graph quadratic equations. This activity can serve as an introduction on how to take a graph and use it to write the equation.

Quadratic Graphs

Group# KEY

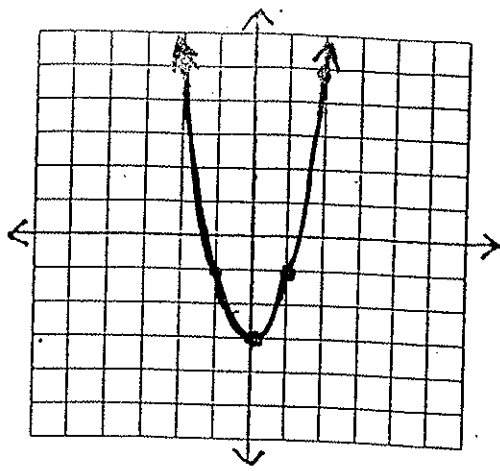
GRAPH	EQUATION	a	OPENS	VERTEX
G1	$y = 2x^2 - 3$	2	UP	(0, -3)
G2	$y = -\frac{1}{2}(x-1)^2 + 2$	$-\frac{1}{2}$	DOWN	(1, 2)
G3	$y = (x-1)^2 - 2$	1	UP	(1, -2)
G4	$y = -3(x+2)^2 + 4$	-3	DOWN	(-2, 4)
G5	$y = -(x+3)^2$	-1	DOWN	(-3, 0)
G6	$y = \frac{1}{3}(x-1)^2 - 3$	$\frac{1}{3}$	UP	(1, -3)
G7	$y = \frac{1}{2}x^2 + 3$	$\frac{1}{2}$	UP	(0, 3)
G8	$y = -2(x-1)^2 + 3$	-2	DOWN	(1, 3)

Quadratic Graphs

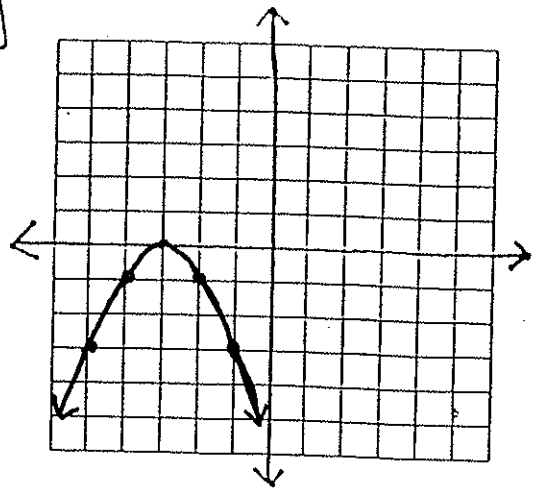
Group# _____

GRAPH	EQUATION	a	OPENS	VERTEX
G1				
G2				
G3				
G4				
G5				
G6				
G7				
G8				

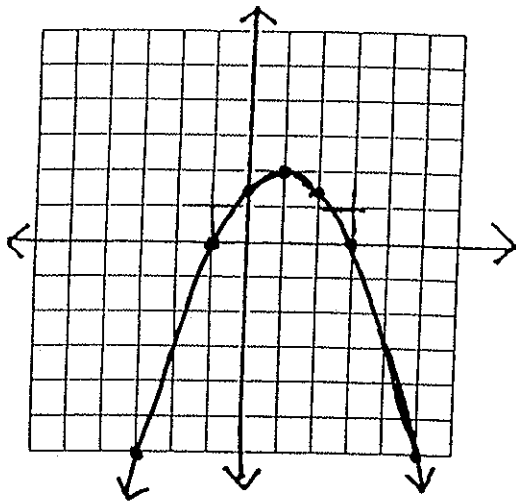
G1



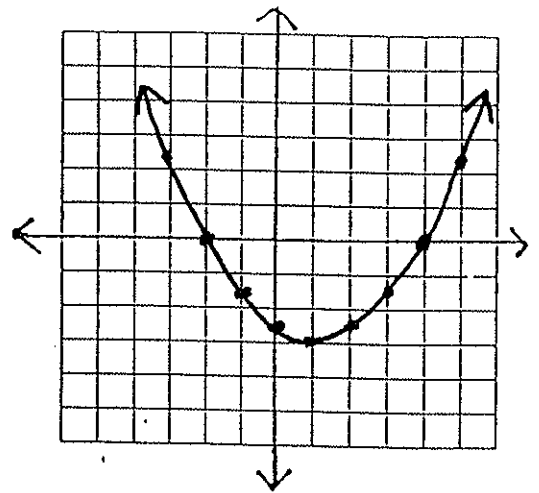
G5



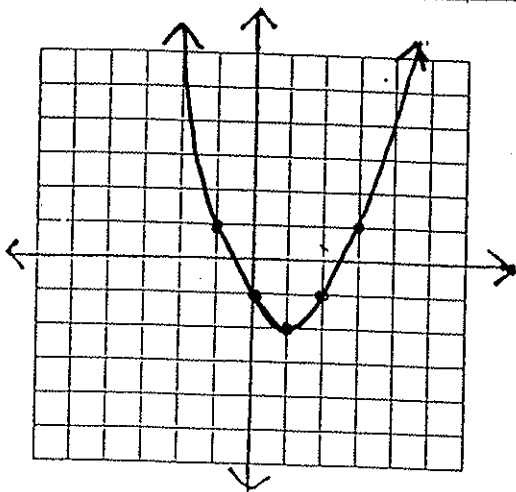
G2



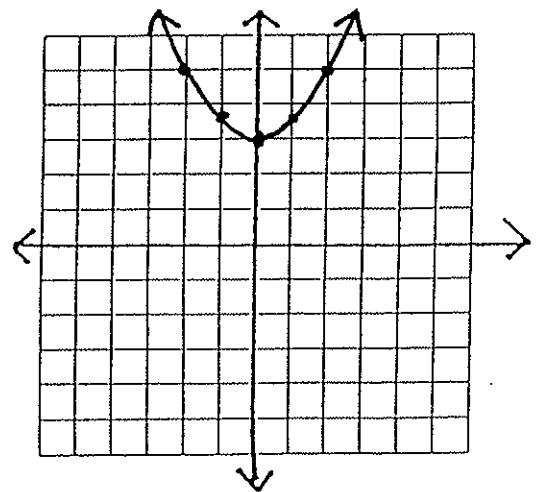
G6



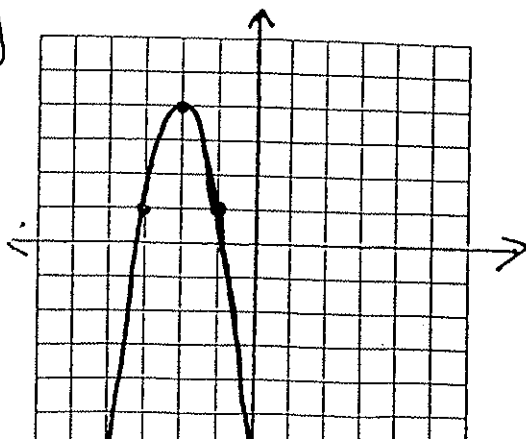
G3



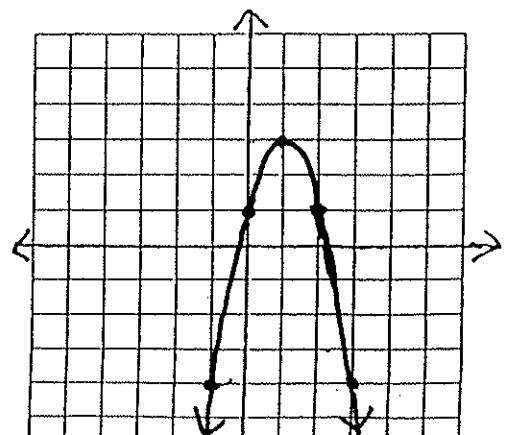
G7



G4



G8



$$y = 2(x)^2 - 3$$

$$y = -(x + 3)^2$$

$$y = -\frac{1}{2}(x - 1)^2 + 2$$

$$y = \frac{1}{3}(x - 1)^2 - 3$$

$$y = (x - 1)^2 - 2$$

$$y = \frac{1}{2}(x)^2 + 3$$

$$y = -3(x + 2)^2 + 4$$

$$y = -2(x - 1)^2 + 3$$

$$a = 2$$

$$a = -1$$

$$a = -\frac{1}{2}$$

$$a = \frac{1}{3}$$

$$a = 1$$

$$a = \frac{1}{2}$$

$$a = -3$$

$$a = -2$$

vertex is
 $(0,-3)$

vertex is
 $(-3,0)$

vertex is
 $(1,2)$

vertex is
 $(1,-3)$

vertex is
 $(1,-2)$

vertex is
 $(0,3)$

vertex is
 $(-2,4)$

vertex is
 $(1,3)$

up

down

down

up

up

up

down

down