

Find new seat, grab bell ringer/hw tracker/quiz folder

Monday 10/15	
Factor each expression.	
1. $k^3 + 36k$	2. $a^2 + a - 2$
$k(k^2 + 36)$	$(a-1)(a+2)$ $\begin{matrix} -2 \\ -1 & 2 \\ 1 \end{matrix}$
3. $2t^2 - 42t + 200$	4. $(h^3 + 4h^2 - 3h - 12)$
\rightarrow $2(t^2 - 21t + 100)$ $\begin{matrix} 100 \\ -21 \end{matrix}$	$h^2(h+4) - 3(h+4)$ $(h+4)(h^2-3)$

due today!

Correct assignments online at biehnmath.weebly.com

Blue transformation ws

Vertex Form A ws

Vertex Form B ws

Parts of a Parabola ws

Three forms of a parabola ws

/50

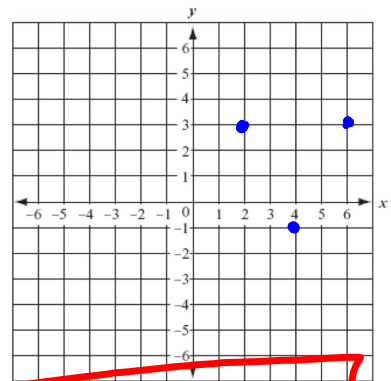
Writing a function for a quadratic equation given a vertex and a point

$$y = a(x - h)^2 + k$$

Vertex: $(4, -1)$ $y = a(x - 4)^2 - 1$

Point: $(2, 3)$ $3 = a(2 - 4)^2 - 1$

$3 = a(-2)^2 - 1$
 $3 = a(4) - 1$
 $+1 \qquad +1$
 $4 = 4a$
 $\frac{4}{4} = \frac{4a}{4}$
 $1 = a$



$$y = 1(x - 4)^2 - 1$$

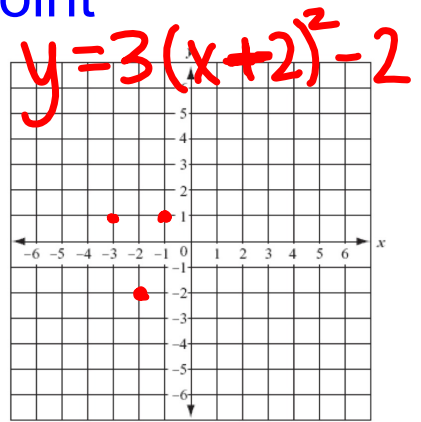
Writing a function for a quadratic equation
given a vertex and a point

Vertex: $(-2, -2)$ $y = a(x - h)^2 + k$

Point: $(-1, 1)$ $1 = a(-1 + 2)^2 - 2$

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

$3 = a$



Writing a function for a quadratic equation
given a vertex and a point

Vertex: $(h, k) = (2, 3)$ $y = a(x - h)^2 + k$

y-intercept is 2

$(0, 2)$

$2 = a(0 - 2)^2 + 3$

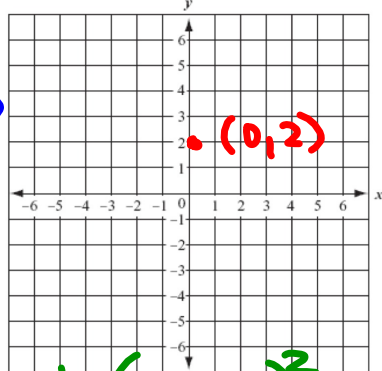
$2 = a(-2)^2 + 3$

$2 = a(4) + 3$

$-3 = \frac{4a}{-3}$

$-\frac{1}{4} = \frac{a}{\cancel{4}}$

$y = -\frac{1}{4}(x - 2)^2 + 3$



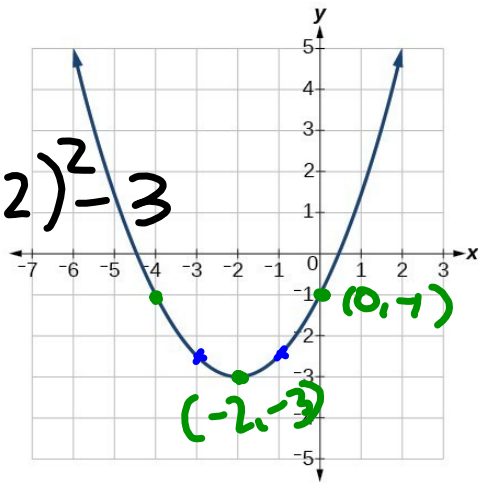
Writing a function for a quadratic equation given a vertex and a point

$$y = a(x - h)^2 + k$$

Vertex: $(\overset{h}{-2}, \overset{k}{-3})$

Point: $(\overset{x}{0}, \overset{y}{-1})$

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



$$-1 = a(0 + 2)^2 - 3$$

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

$$\begin{matrix} -1 \\ +3 \end{matrix} = 4a \begin{matrix} - \\ +3 \end{matrix}$$

$$\frac{1}{2} = \frac{2}{4} = \frac{1}{2}a$$

Writing a function for a quadratic equation
given a vertex and a point

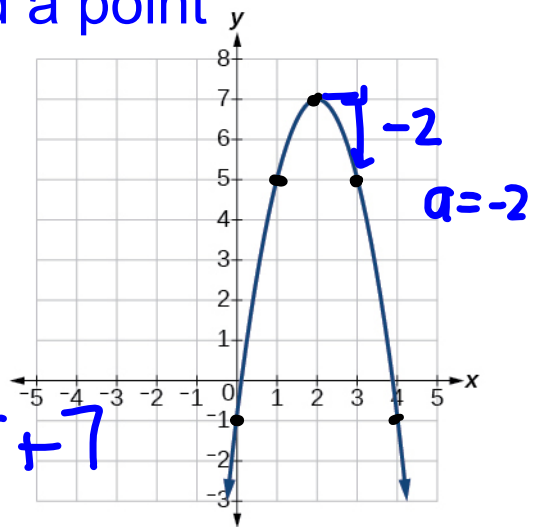
$$y = a(x - h)^2 + k$$

Vertex: $(\overset{h}{2}, \overset{k}{7})$ $5 = a + 7$

Point: $(\underset{x}{1}, \underset{y}{5})$ $\frac{-2}{1} = \frac{1a}{1}$

$-2 = a$

$$y = -2(x - 2)^2 + 7$$



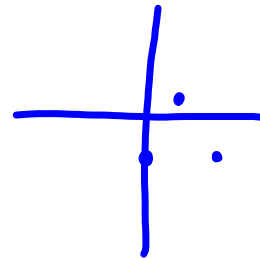
Write a quadratic equation that goes through the points

$(0, -2), (1, 1), (4, -2)$

Evaluate $f(5)$

$$y = -x^2 + 4x - 2$$

$$\begin{aligned} f(5) &= -(5)^2 + 4(5) - 2 \\ &= -25 + 20 - 2 \\ &= -7 \end{aligned}$$



Write a quadratic equation that goes through the points

Evaluate $f(0)$

x	$f(x)$
1	4
2	15
3	32

The table shows the number n of tickets to the school musical sold d days after the tickets went on sale.

x Day, d	y Number of tickets sold, n
1	7
2	25
4	49

a. Write a quadratic equation that represents the data

$$\underline{f(x) = -2x^2 + 24x - 15}$$

b. How many tickets were sold on day 9?

$$f(9) = -2(9)^2 + 24(9) - 15 = 39$$

a. On what day was the greatest number of tickets sold?



$$\frac{-24}{2(-2)} = \frac{-24}{-4} = (6, 57)$$

day 6.57 tickets

due Wednesday - check KEY online :)

Name: _____ Hr: _____

3.3A Writing Quadratic Equations Given Three Points or a Vertex and a Point

Find an equation in standard form of the parabola passing through the points.

1. $(1, -1), (2, -5), (3, -7)$

2.

x	F(x)
-2	-1
2	-1
3	9

3. The table shows the number n of tickets to a school play sold t days after the tickets went on sale, for several days.

a. Find a quadratic equation for the data

Day, t	Number of tickets sold, n
1	32
3	64
4	74

b. Use the equation to find the number of tickets sold on day 7

c. When was the greatest number of tickets sold?

4. The table gives the number of skis sold in a sporting goods store for several months last year.

a. Find a quadratic equation for the data.

Month, t	Number of pairs of skis sold, s
(Jan)1	82
(March)3	42
(May)5	18

b. Use the equation to predict the number of skis sold in November.

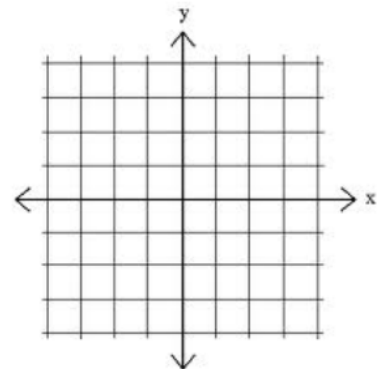
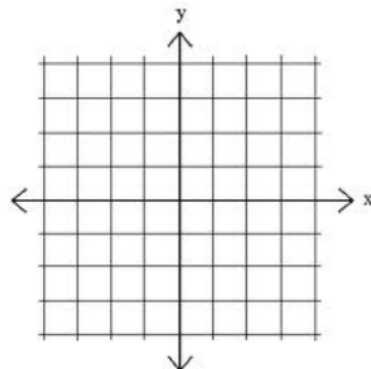
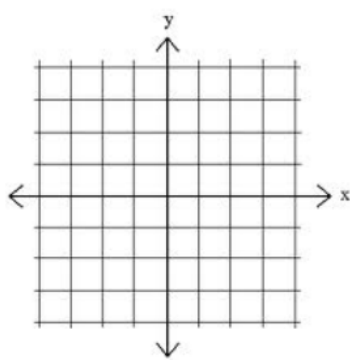
c. In what month was the fewest number of skis sold?

Find an equation for a quadratic function given the following information. Then sketch a graph.

5. Vertex: $(1, 4)$ and a point $(2, 3)$

6. Vertex: $(3, 1)$ and a point $(-1, 5)$

7. Vertex: $(2, -3)$ and y-intercept of -2



8. Use the information provided to find the following:

Vertex: $(2, -4)$ and x-intercept of 1

- A) The equation for the quadratic function.
- B) Sketch a graph.
- C) State the domain and range
- D) Determine if there is a max or min

