

Date: _____

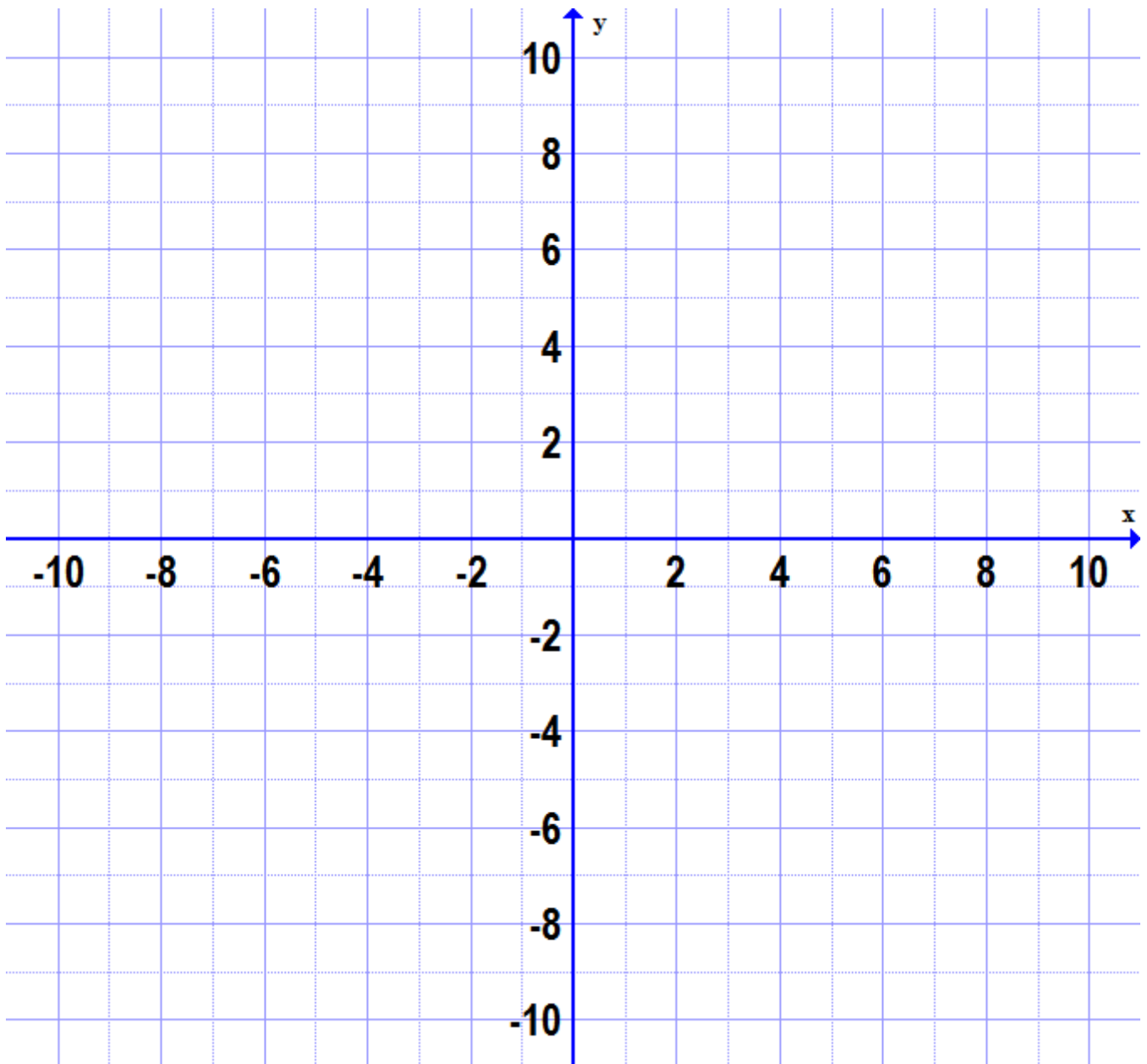
Learning Goal

Graphing Vertex Form Equations

Identify the key features and graph

$$y = -0.5(x + 1)^2 + 8$$

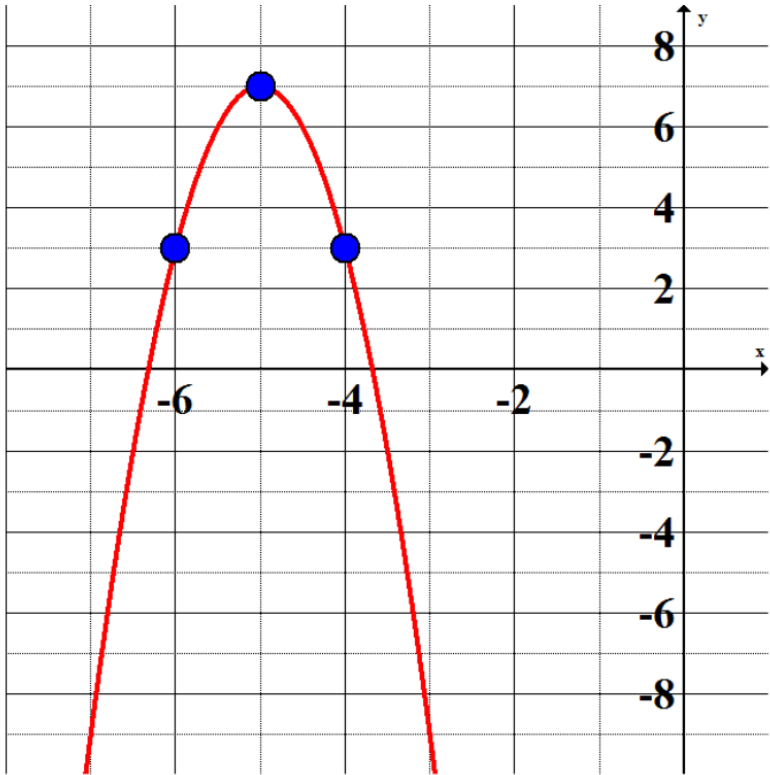
Vertex	Step Pattern	Direction of Opening



What's my a value?

If you were given the graph of a parabola, how would you determine its step pattern?

What's my *equation*?



Vertex?

Opens up or down?

Step Pattern?

Values of a, h, k

Equation:

What's my *equation*?

If you are given the graph a parabola, to write its equation you must determine the coordinates of

the _____ and the

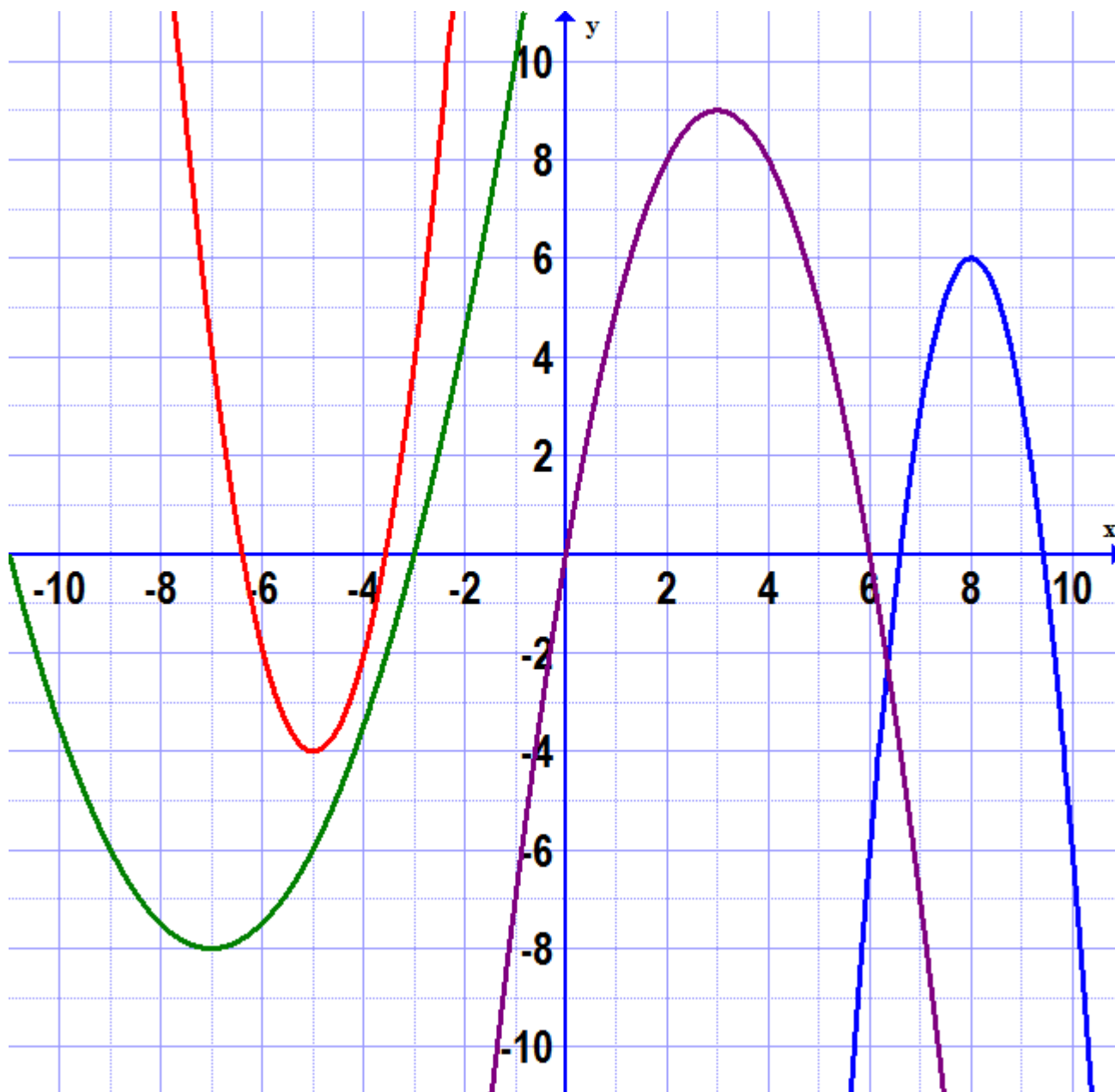
_____ by

moving over _____ and up or down until you hit the next point.

Then, plug the values of a , h and k into the general form of the vertex form equation.

What's my *equation*?

Determine the equation of each parabola.



What's my *equation*?

What if you couldn't move over 1 and find the next point or what if you weren't given a graph at all?

Determine the equation of the parabola with a vertex of $(4, -5)$ that goes through the point $(2, 7)$.

What's my *equation*?

To write the vertex form equation of a parabola given the vertex (4, -5) and a point (2, 7):

1. Write the general vertex form equation

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

2. Plug in the coordinates of your vertex (h and k).
3. Plug in the coordinates of your point (x and y)
4. Solve for a!

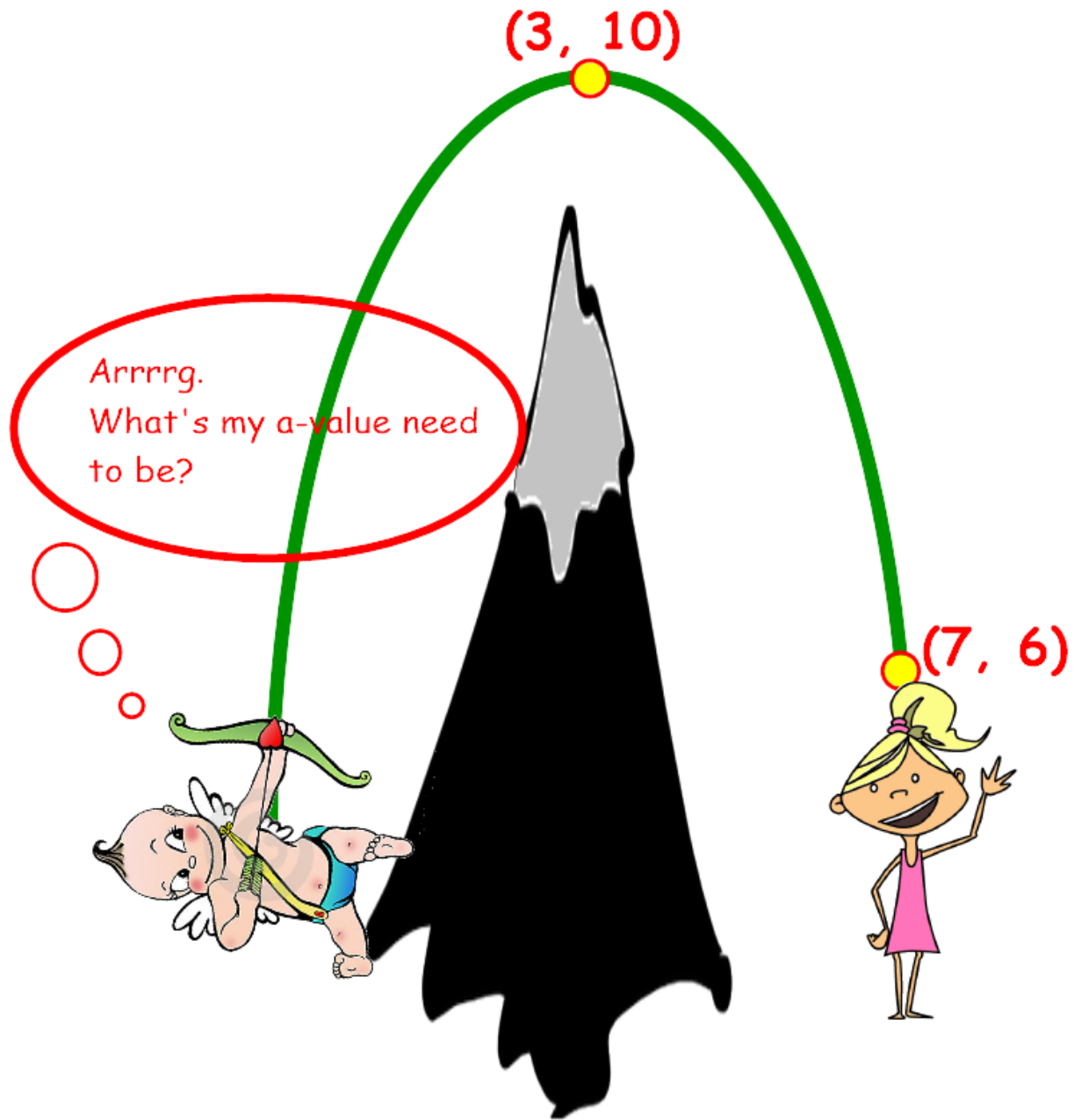
Cupid's Arrow

Cupid is running out of time!
It's 4 days until Valentine's Day and he
still hasn't managed to hit one of his targets.



Jenny and Cupid are separated by a mountain.





If Cupid knows the coordinates shown above, what does he need to set his a-value to ensure he hits Jenny with his magical arrow?