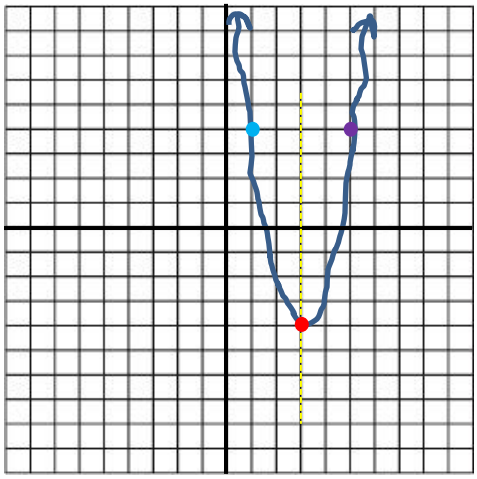
Graphing Parabolas:

1. Graph the parabola: $y = 2(x-3)^2 - 4$

a. Does it open Up, Down, Left, or Right?

b. What are the values of a = 2, h = 3, and k = –4

c. vertex = (3 , – 4) → plot it ●



Will finding and plotting the focus and directrix help?

A little, but not really.

d. Use a "T" table. Plug in an x value that is near the value of h.

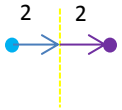
x	y
1	4

$y = 2(1-3)^2 - 4$

$y = 2(-2)^2 - 4 = 2(4) - 4 = 8 - 4 = 4$

Plot this coordinate. ●

e. Use the axis of symmetry to plot another point across from this point



f. Connect the dots

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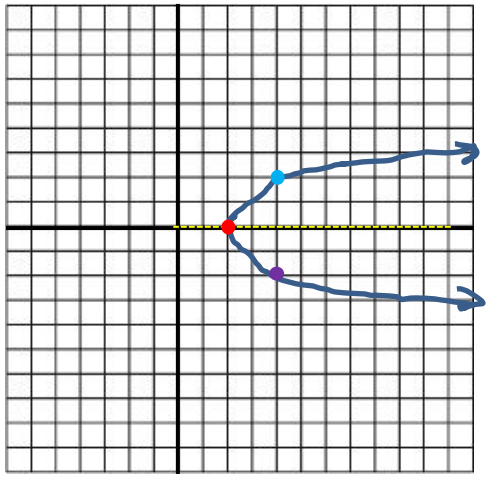
2. Graph the parabola: $x = \frac{1}{2}y^2 + 2$

a. Does it open Up, Down, Left, or Right? Right

b. What are the values of a = $\frac{1}{2}$, h = 2 , and k = 0



c. vertex = (2 , 0) → plot it ●

d. Use a "T" table. Plug in an y value that is near the value of k.

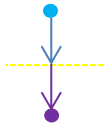
x	y
4	2

$x = \frac{1}{2}2^2 + 2$

$x = \frac{1}{2} \cdot 4 + 2 = 2 + 2 = 4$

Plot this coordinate. ●

e. Use the axis of symmetry to plot another point across from this point



f. Connect the dots