

Name: \_\_\_\_\_

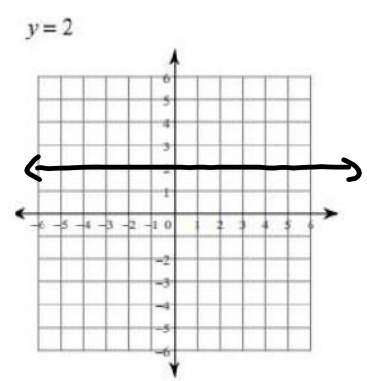
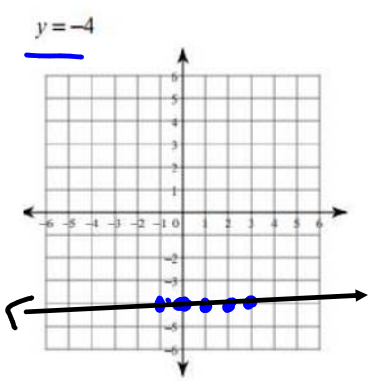
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**STEP FUNCTIONS!**

**Step functions** are another type of function that is related to the linear family. It's graph will reflect its well chosen name.

**Do Now:** Graph the following two lines:



$\leq$   $\geq$   $\bullet$   $<$   $>$   $\circ$

Let's now investigate some step functions.

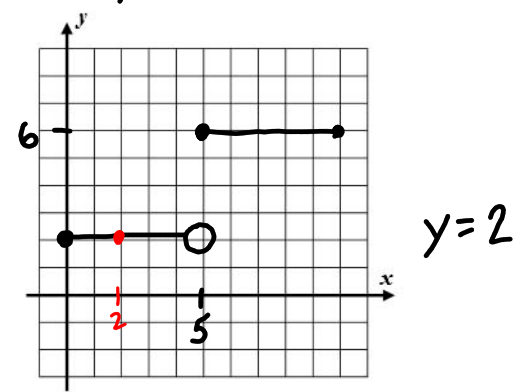


**Exercise #1:** Consider the step function given by  $f(x) = \begin{cases} 2 & 0 \leq x < 5 \\ 6 & 5 \leq x \leq 10 \end{cases}$

$y = 2$   $0 \leq x < 5$   
 $y = 6$   $5 \leq x \leq 10$

(a) Evaluate each of the following. After you do your evaluation, write down what coordinate point must lie on the graph as a result of the calculation.

$f(0) = 2$      $f(2) = 2$      $f(4) = 2$   
 $f(5) = 6$      $f(7) = 6$      $f(10) = 6$



(b) Graph the step function on the grid to the right.

Step functions can arise in the real world whenever the **output** to a particular function is **constant** over particular ranges. Here's an example

*Exercise #2:* At a local amusement park, the park charges an admission based on age. Graph the amount of money a person would have to pay for admission based on their age. Remember that someone who is one day short of 4 years old can consider themselves three and under.

