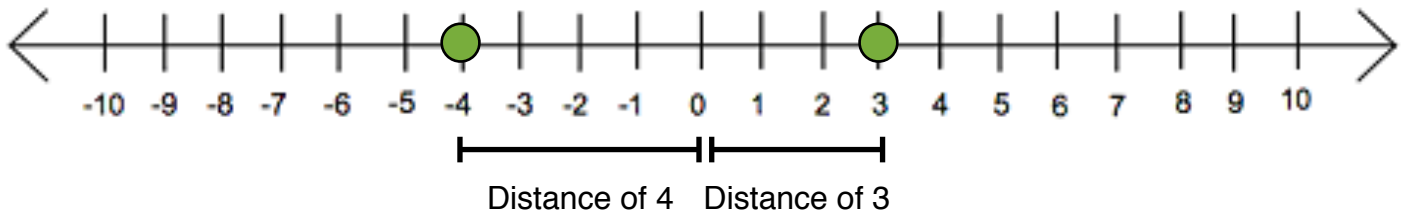


1) Recall that the definition of $|x|$ is the positive distance from x to 0 on the number line. And because distance are never negative, an absolute value will never be negative. For example:

$$|3| = 3$$

$$|-4| = 4$$

$$|0| = 0$$



Before continuing on this worksheet, please login to Moodle and do the Absolute Value Expressions activity. Please read the directions before beginning.

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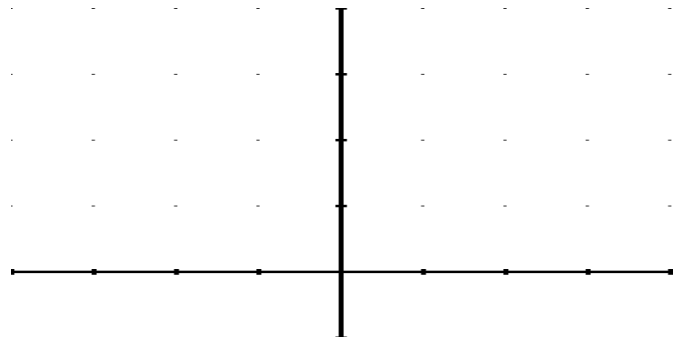
1 Not available

2 Not available

2. We can use a **table** to make the graph of an absolute value equation. Below is the table for $y = |x|$.

x	y
-2	$ -2 = 2$
-1	$ -1 = 1$
0	$ 0 = 0$
1	$ 1 = 1$
2	$ 2 = 2$
3	$ 3 = 3$

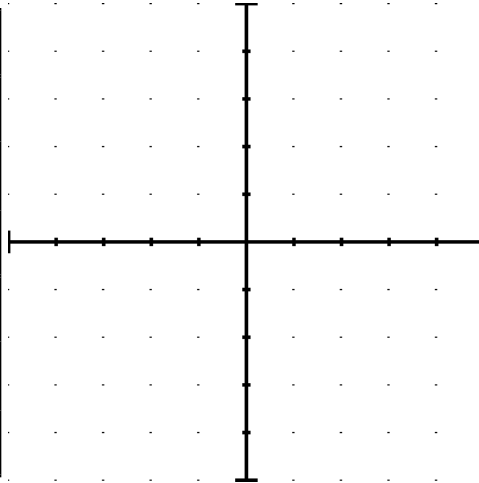
From this table, we have several solutions, including $(-2, 2)$. Plot and connect the points on the graph below and notice the shape of your graph.



3) Amazing! Absolute value graphs make V-shapes. (If your graph is not a V, please go back and fix your answer on the previous page) The point where the graph changes directions is called the **vertex**. Make the following absolute value graphs by making a table. See if you can notice any patterns in the graphs - your vertex **MUST** be visible.

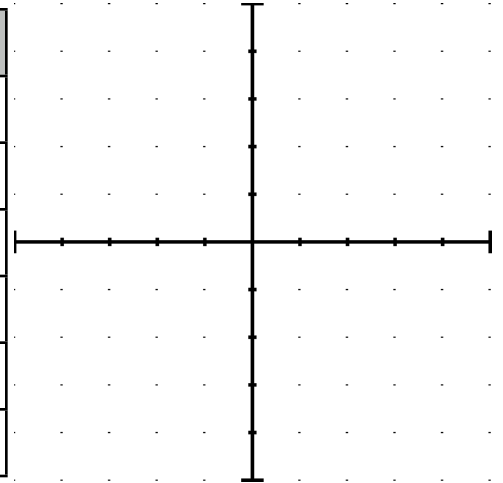
a. $y = |x + 1|$

x	y



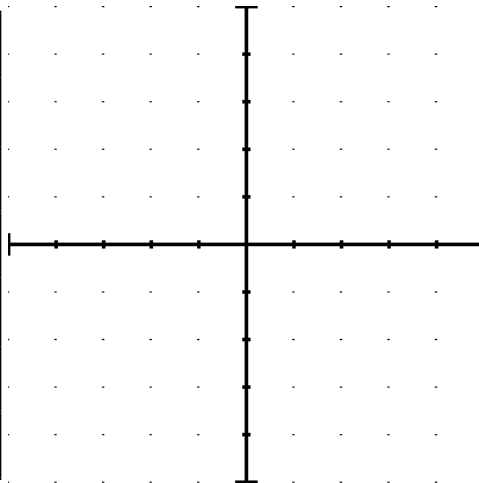
b. $y = |x + 2|$

x	y



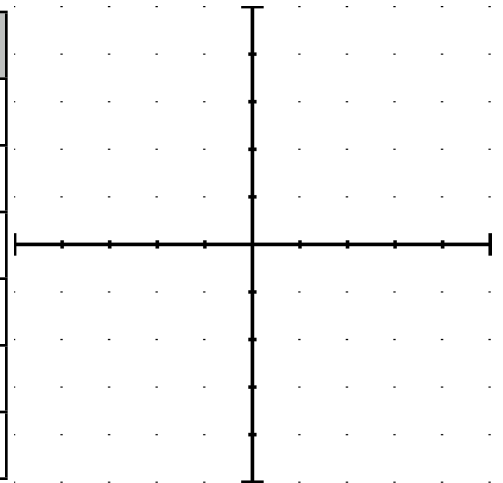
c. $y = |x - 2|$

x	y



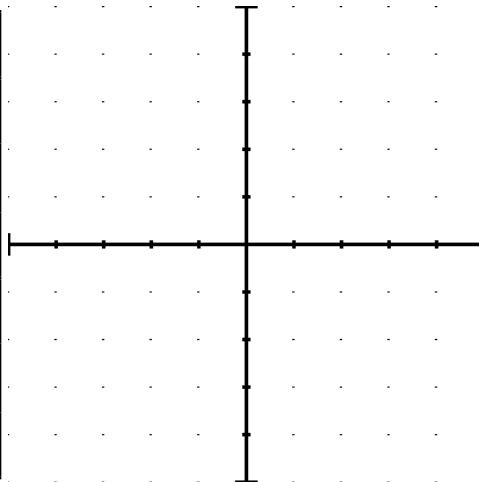
d. $y = |x - 4|$

x	y



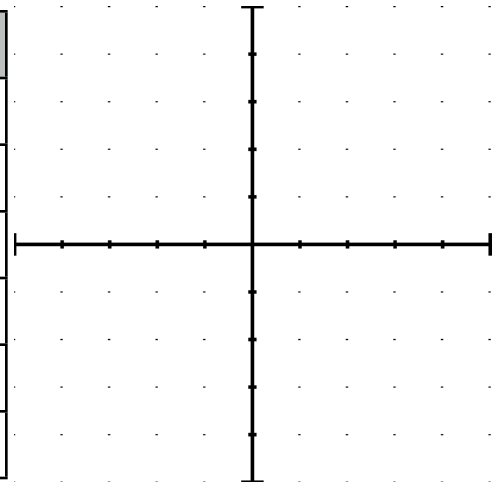
e. $y = |x| + 1$

x	y



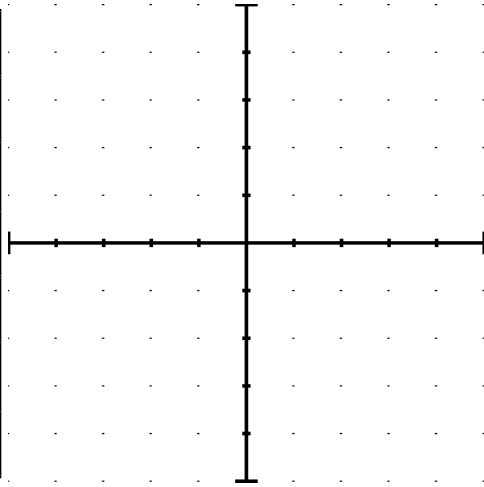
f. $y = |x| + 2$

x	y



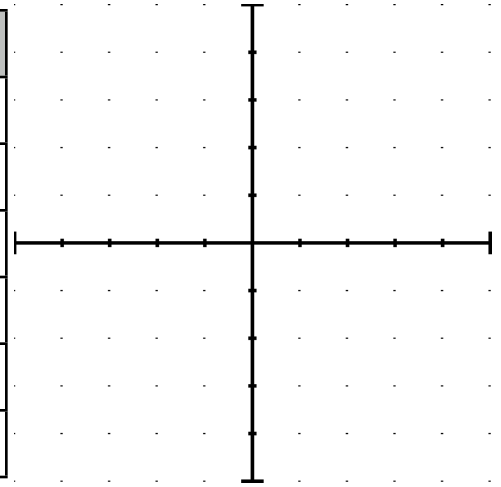
g. $y = |x| - 2$

x	y



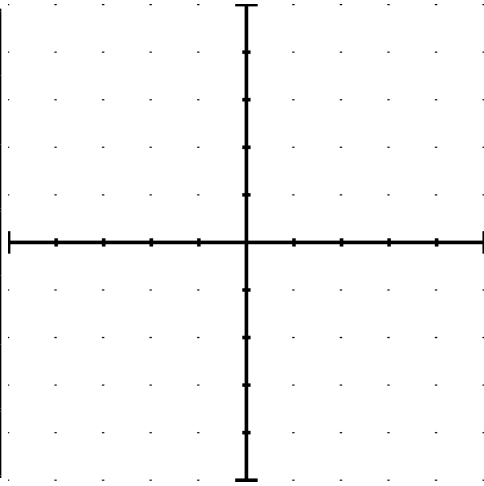
h. $y = |x| - 3$

x	y



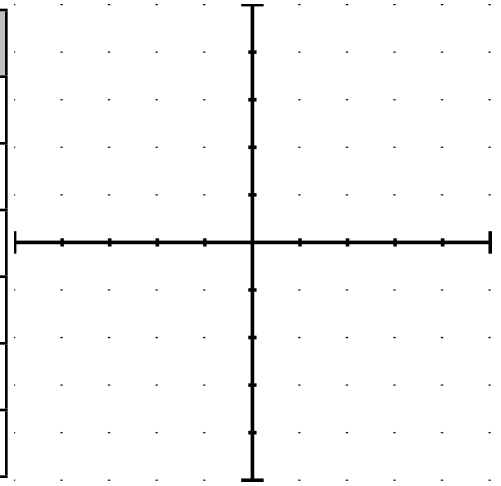
i. $y = |x - 1| + 2$

x	y



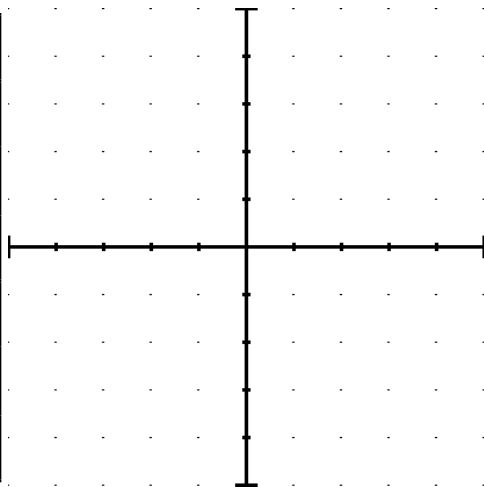
j. $y = |x + 1| - 2$

x	y



k. $y = 2|x|$

x	y



l. $y = \frac{1}{2}|x|$

x	y

