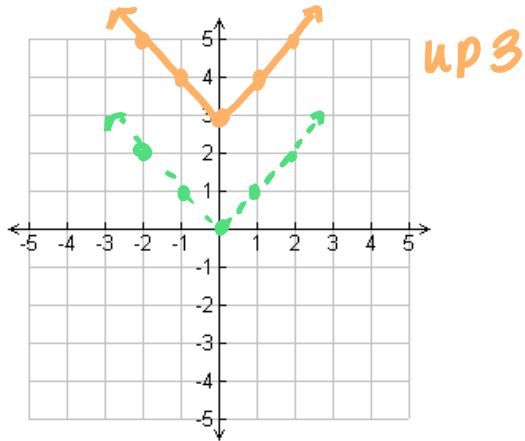
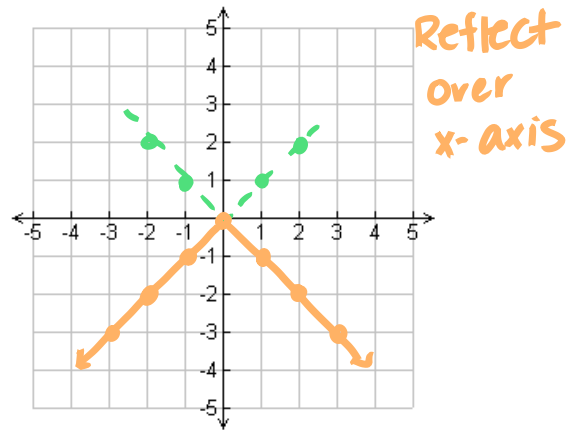


Objective: Graphing Absolute Value Functions and Transformations

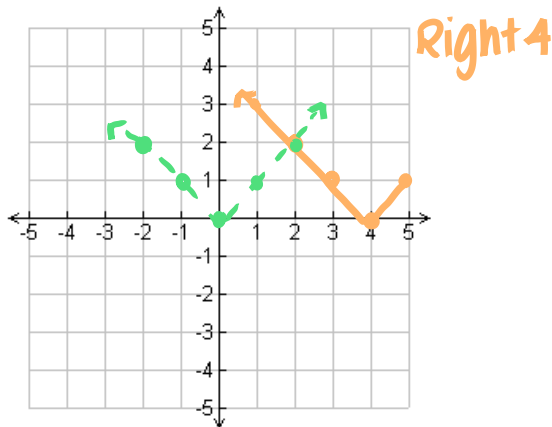
1. Graph the parent function $y = |x|$.
Then graph the transformation $y = |x| + 3$.



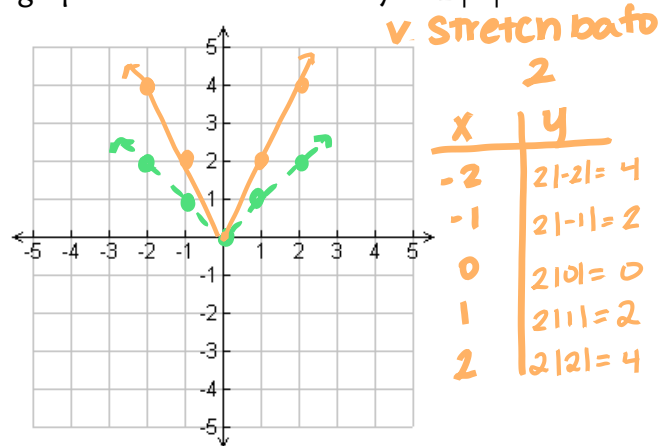
2. Graph the parent function $y = |x|$.
Then graph the transformation $y = -|x|$.



3. Graph the parent function $y = |x|$.
Then graph the transformation $y = |x - 4|$.



4. Graph the parent function $y = |x|$.
Then graph the transformation $y = 2|x|$.



5. Identify the transformation of the parent function, $y = |x|$.

a. $y = |x - 13|$

Right 13 units

b. $y = |x| - 22$

Down 22 units

c. $y = |-x|$

Reflect across y-axis

d. $y = |x + 4| - 24$

- Left 4
- Down 24

e. $y = |x| - 12$

Down 12 units

f. $y = |x + 1|$

Left 1 unit

g. $y = -|x|$

Reflect across x-axis

h. $y = |x - 6| + 12$

- Right 6
- Up 12

6. Given the transformation description on the parent function $y = |x|$, write the new equation.

a. Left 5 units

$$y = |x + 5|$$

b. Up 10 units

$$y = |x| + 10$$

c. Reflects over x-axis

$$y = -|x|$$

d. Vertical stretch by a factor of 4

$$y = 4|x|$$

f. Down 11 units

$$y = |x| - 11$$

f. Right 4 units

$$y = |x - 4|$$

g. Vertical shrink by a factor of 1/3

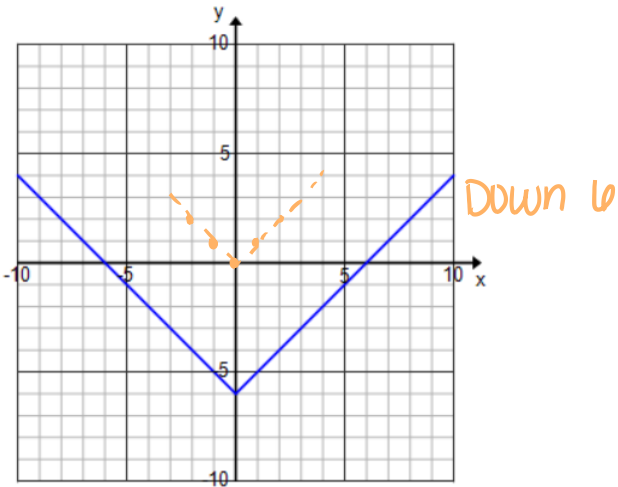
$$y = \frac{1}{3}|x|$$

h. Right 7 and up 3

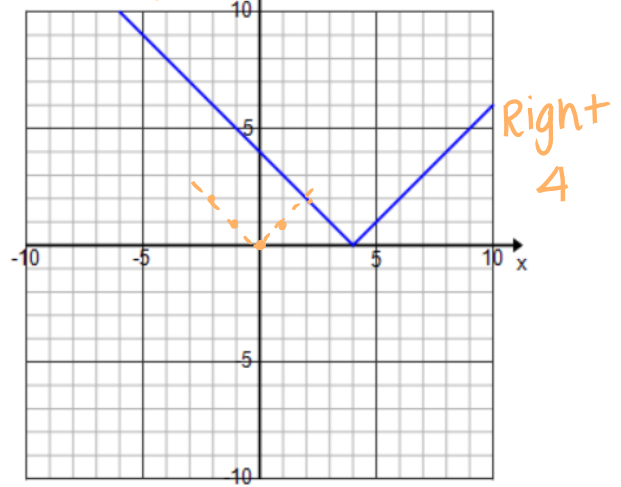
$$y = |x - 7| + 3$$

(7-10) Given the graph, write the transformation equation from the parent function $y = |x|$.

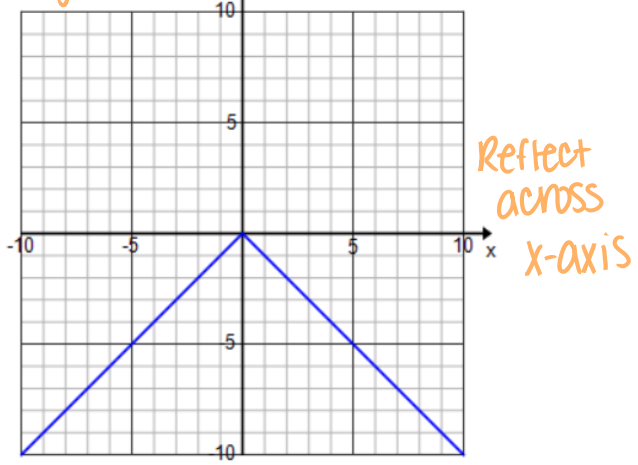
7. $y = |x| - 6$



8. $y = |x - 4|$



9. $y = -|x|$



10. **Bonus** $y = |x - 2| + 4$

