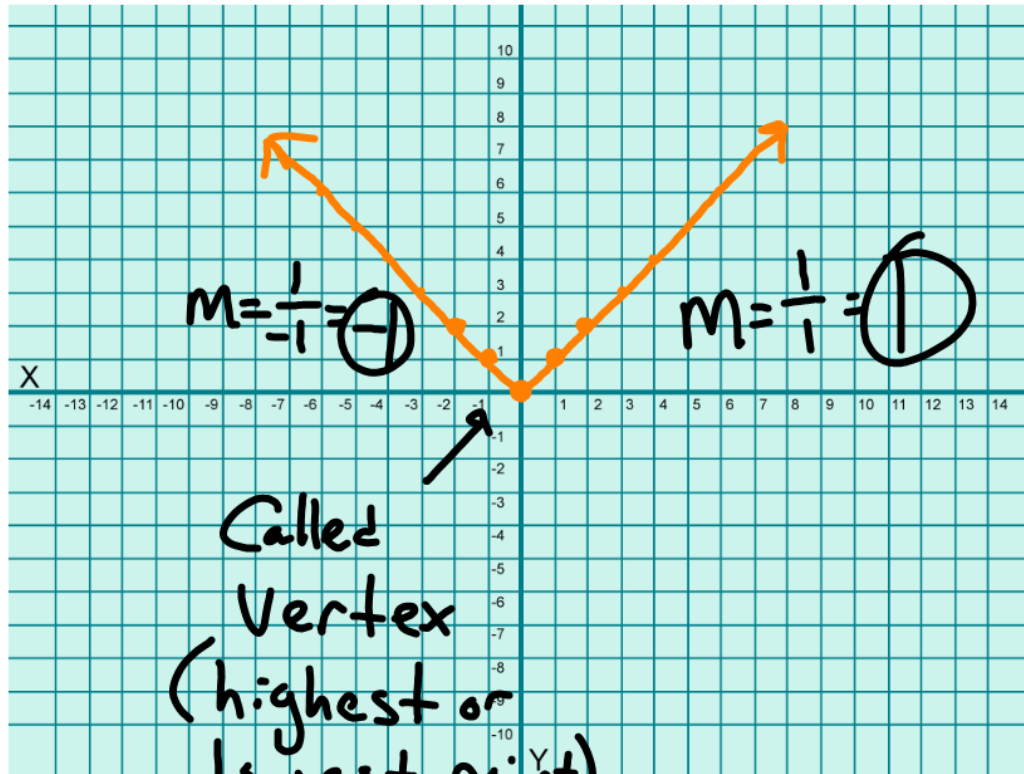


# 2.7 Absolute Value Function

## ! Transformations!



Symmetry with y-axis

$$f(x) = |x|$$

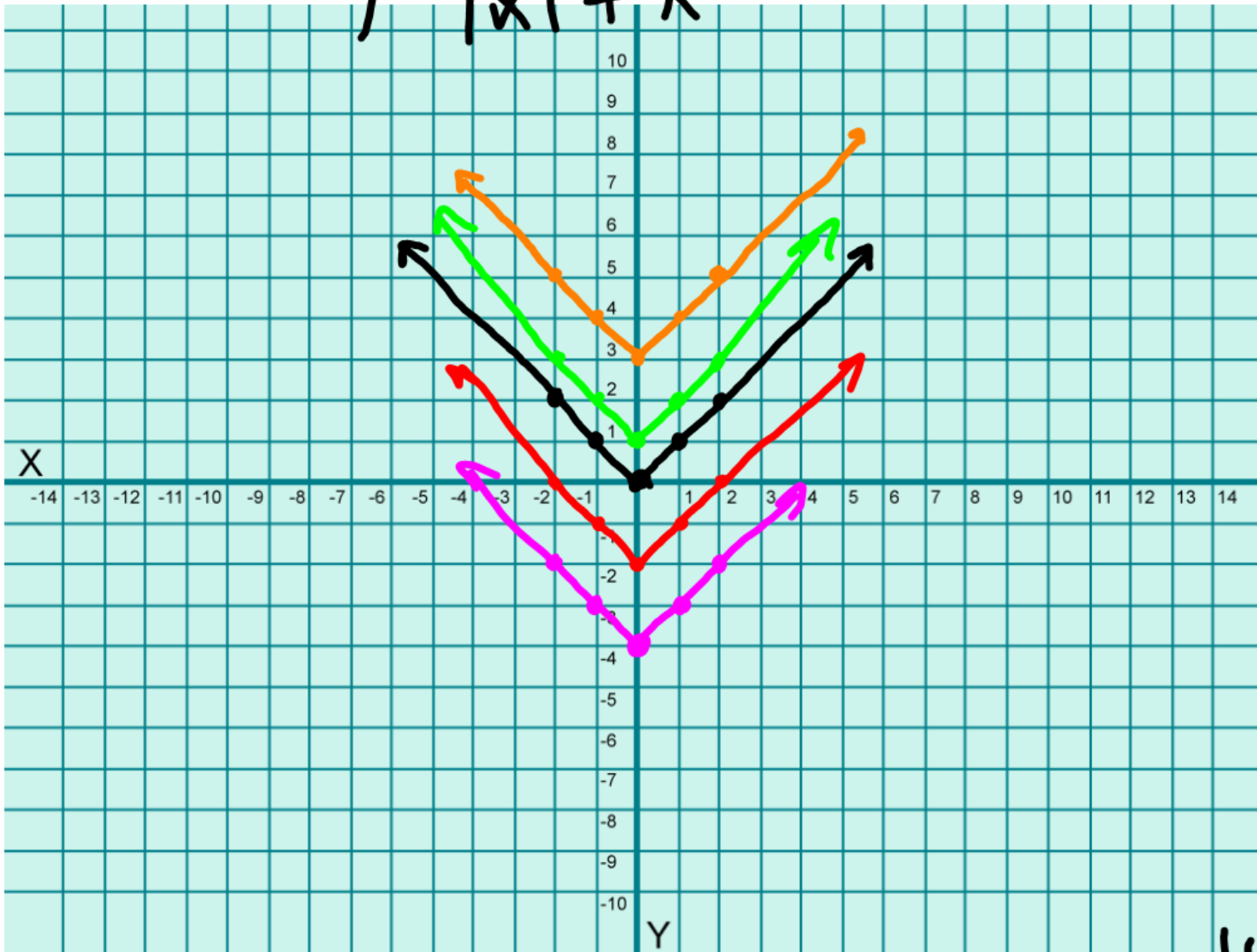
$$y = |x|$$

$$y = |x - h| + k$$

for  $y = |x|$

x	y
-2	2
-1	1
0	0
1	1
2	2

$$y = |x| + k$$



$$y = |x| + 3$$

$$y = |x| + 1$$

$$y = |x|$$

$$y = |x| - 2$$

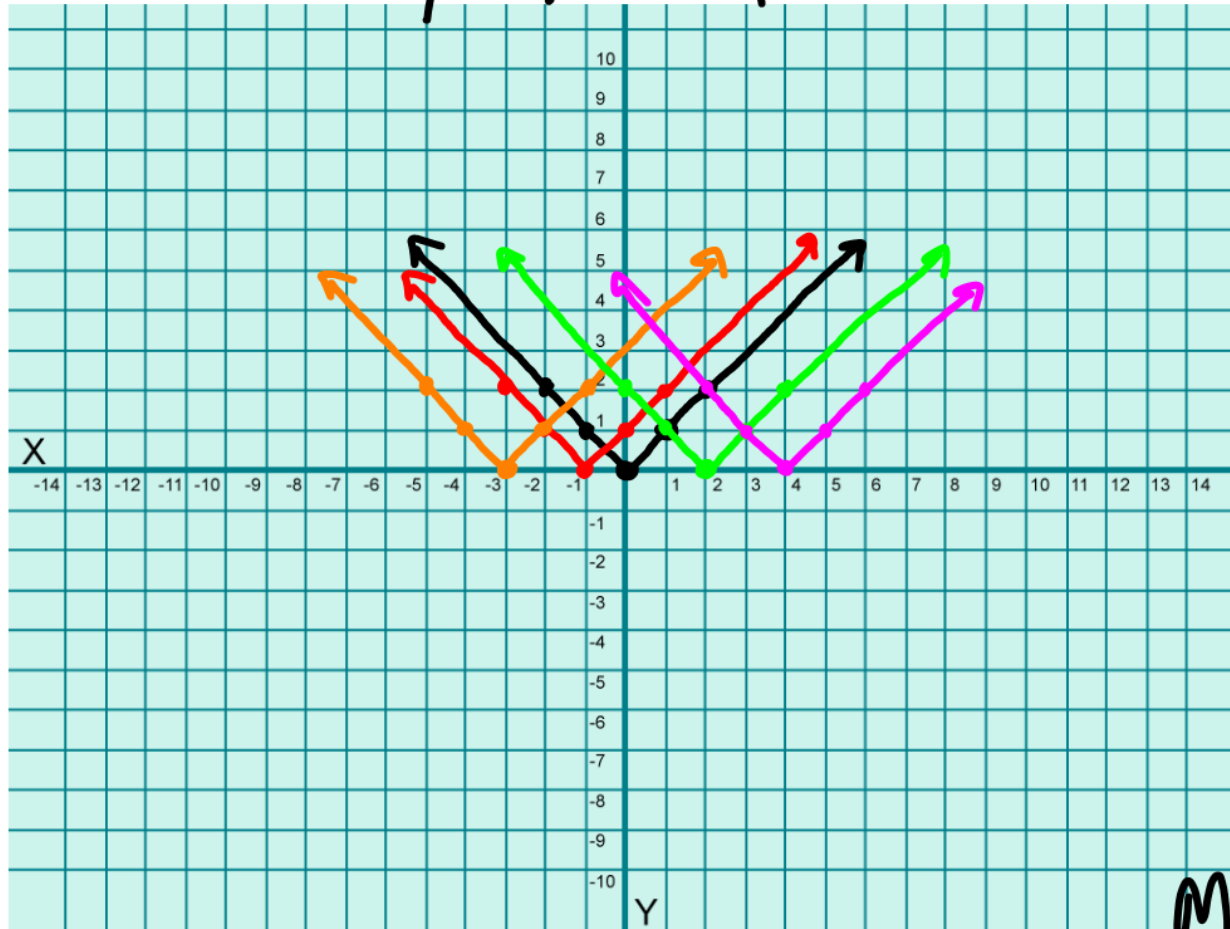
$$y = |x| - 4$$

Moves  
Vertically  
by k units

$$y = |x| - 53$$

↖ down 53

$$y = |x - h|$$



$$y = |x+3|$$

$$y = |x+1|$$

$$y = |x|$$

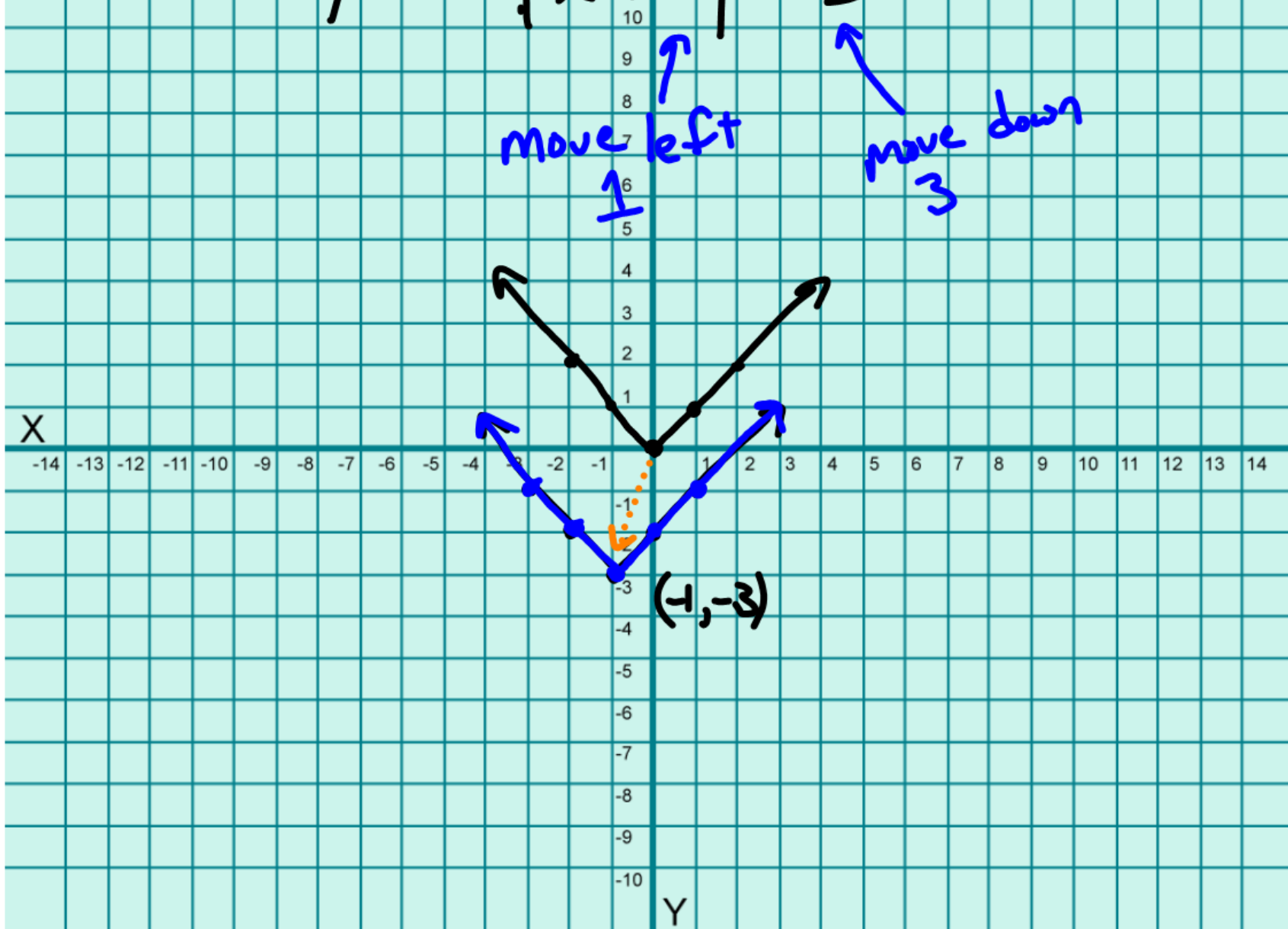
$$y = |x-2|$$

$$y = |x-4|$$

Moves the  
vertex

horizontally  
the opposite  
of  $h$

$$y = |x + 1| - 3$$



# Homework:

Name vertex & Sketch

①  $y = |x - 1| + 1$     ②  $y = |x + 2| - 1$     ③  $y = |x + 3| + 2$

Name vertex

④  $y = |x - 92| + 16$

⑤  $y = |x + 1066| - 1945$

