

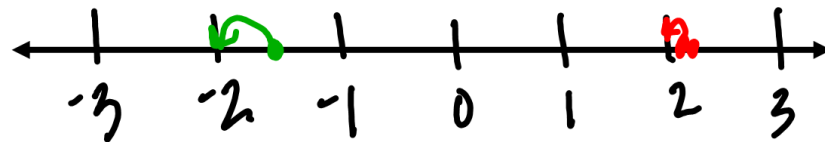
2.6 Step Functions

① Greatest Integer Function
or Floor Function
or Rounding-down Function

② Ceiling Function
or Rounding-up Function

① Greatest Integer Function

Integer less than or = to value



$$\lceil 2.1 \rceil = 2$$

$$\lceil 2.2 \rceil = 2$$

$$\lceil 2.5 \rceil = 2$$

$$\lceil 2.9 \rceil = 2$$

$$\lceil 3.1 \rceil = 3$$

$$\lceil 3.5 \rceil = 3$$

$$\lceil 3.9999 \rceil = 3$$

$$\lceil 4 \rceil = 4$$

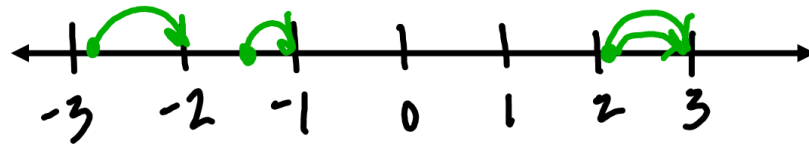
$$\lfloor -1.5 \rfloor = -2$$

$$\lfloor -1.6 \rfloor = -2$$

$$\lfloor -0.3 \rfloor = -1$$

$$\lfloor \frac{1}{2} \rfloor = 0$$

Ceiling Function
 Rounding-up Function
 Integer greater than or = to value



$$\lceil 2.1 \rceil = 3$$

$$\lceil -1.4 \rceil = -1$$

$$\lceil 2.2 \rceil = 3$$

$$\lceil -2.7 \rceil = -2$$

$$\lceil 2.9 \rceil = 3$$

$$\lceil 3 \rceil = 3$$

Absolute Value Function

V Shape

$$|4| = 4$$

$$|3.7| = 3.7$$

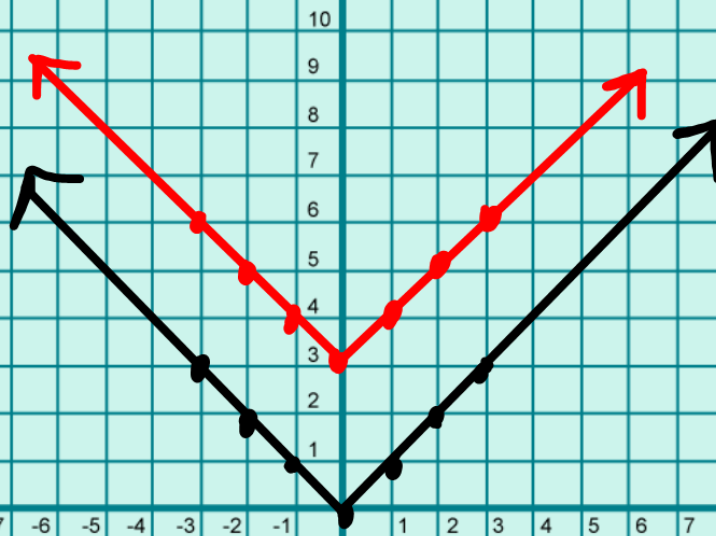
$$|-4| = 4$$

$$|-1.6| = 1.6$$

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

$$y = x$$

X	Y
-3	3
-2	2
-1	1
0	0
1	1
2	2



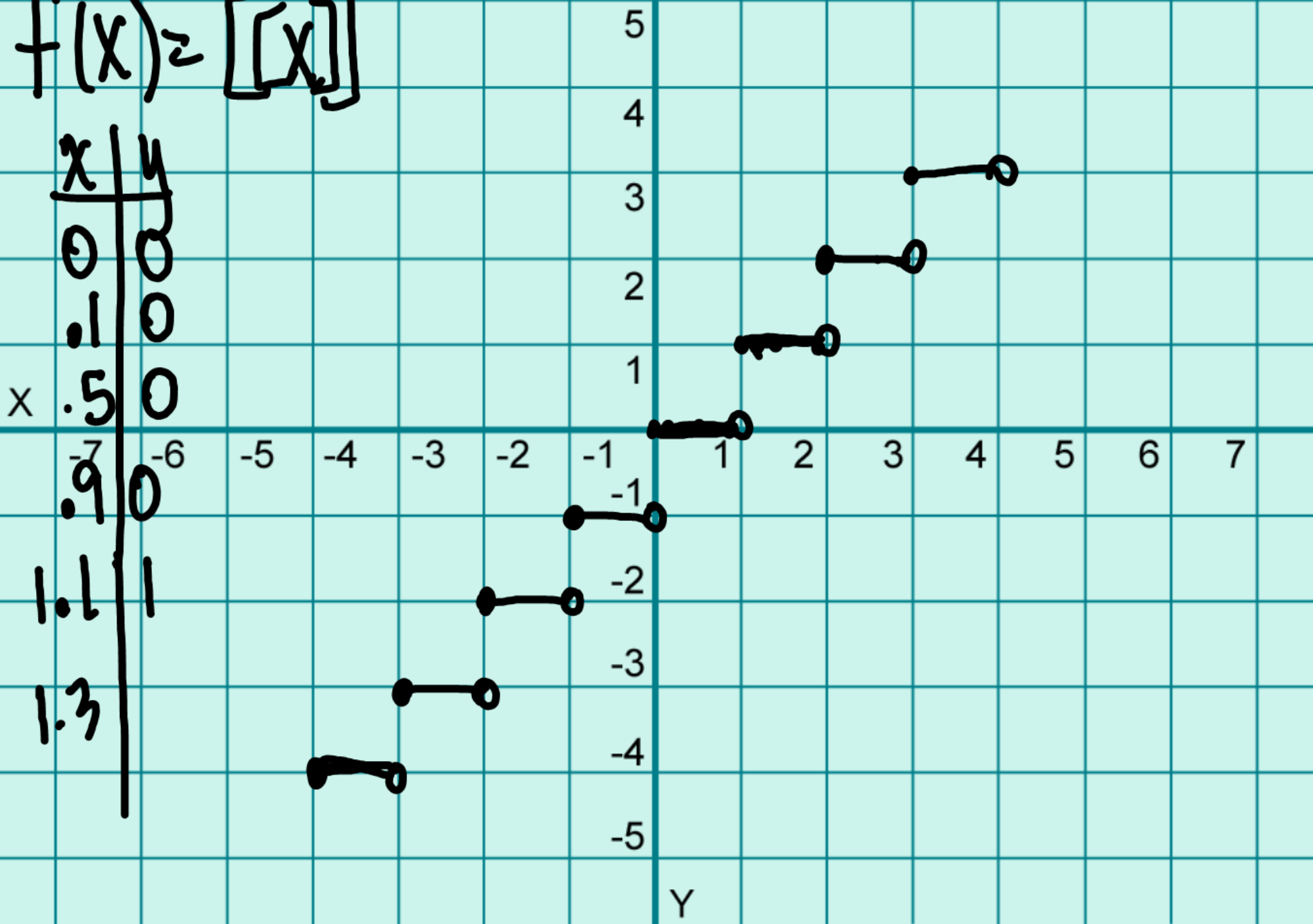
$$f(x) = |x| + 3$$

Translation
3 units up

X	Y
-3	6
-2	5
-1	4
0	3
1	4
2	5

$$f(x) = \lfloor x \rfloor$$

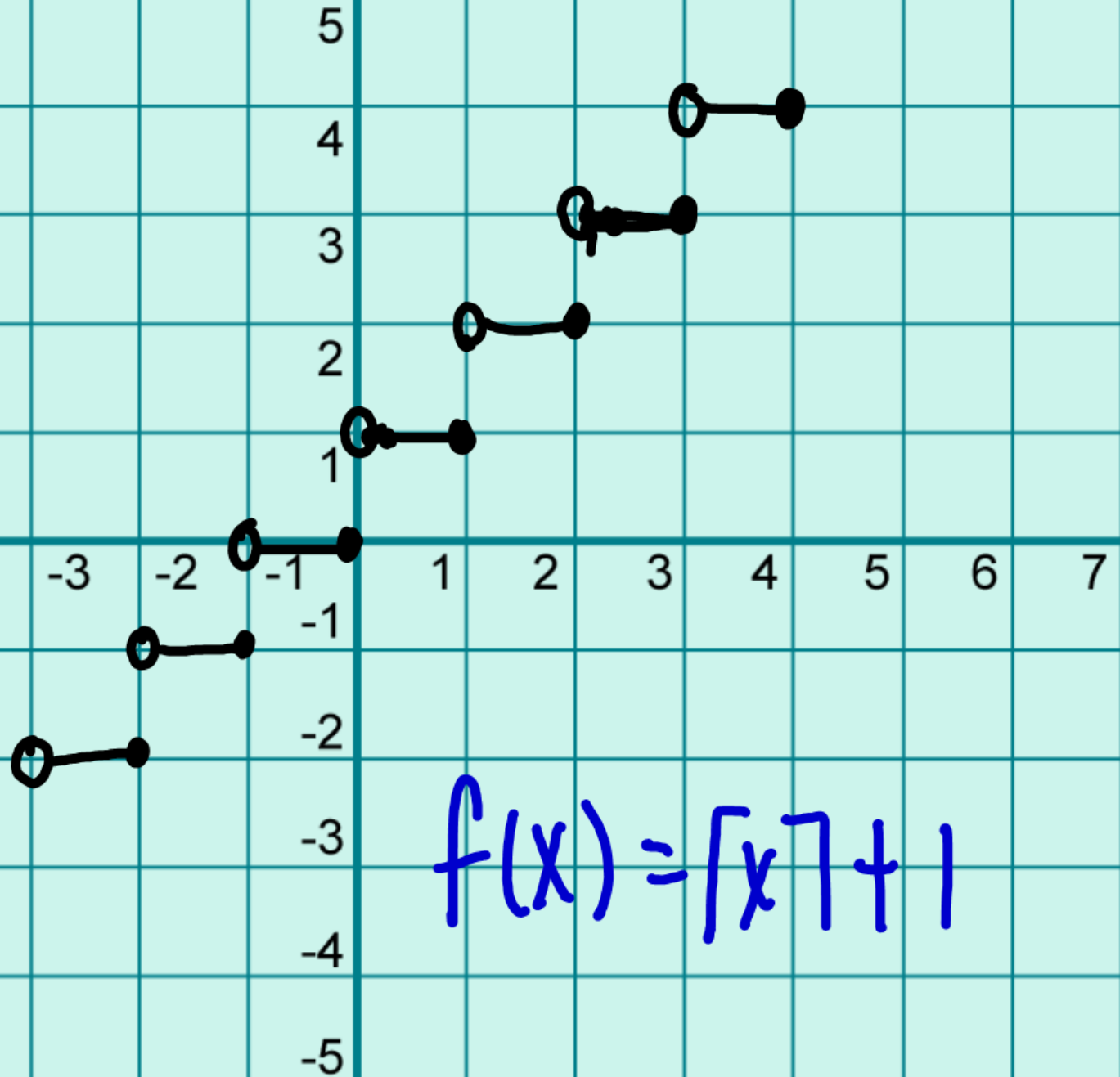
x	y
0	0
.1	0
.5	0
.9	0
1.1	1
1.3	1



$$f(x) = \lceil x \rceil$$

x	y
0	0
1	1
2	1
3	1
9	1
2	

x



$$f(x) = \lceil x \rceil + 1$$

y

$$[4] + [3.2]$$

$$4 + 3$$

$$7$$

$$[-4.1] + [-2.1]$$

$$-5 + -3$$

$$-8$$

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