



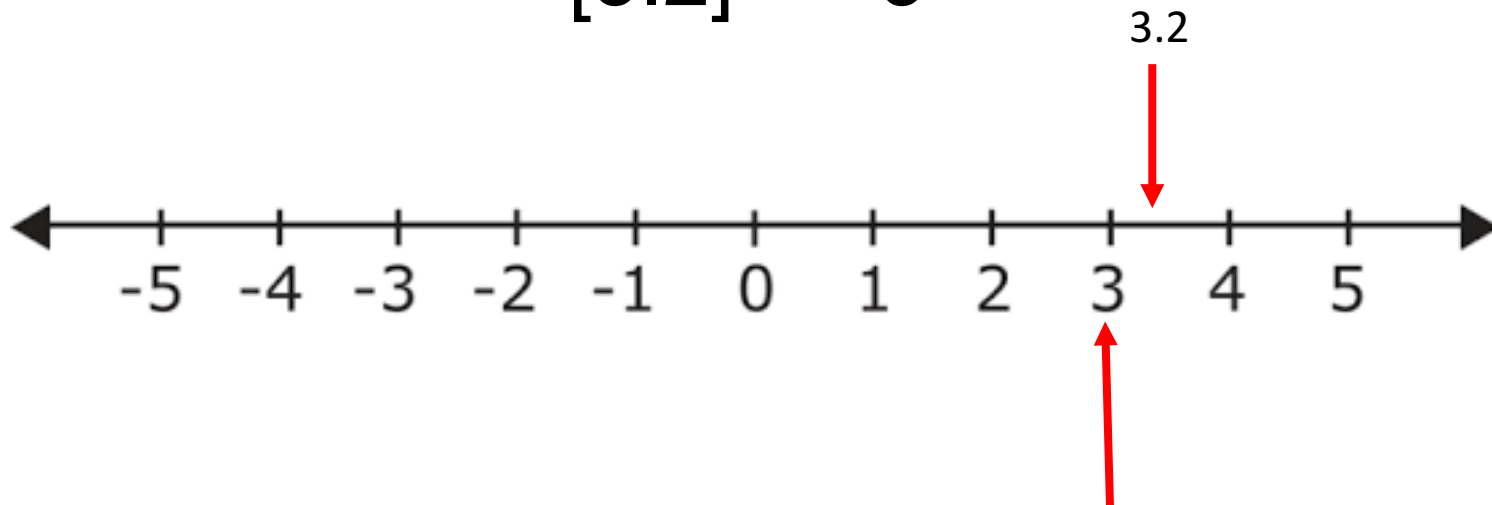
MEMORY AID TIPS 2.4

Greatest Integer Function Introduction

[x]

- The symbol [] means:
 - rounds the value of “x” to the greatest integer less than or equal to
 - round down

$$[3.2] = 3$$

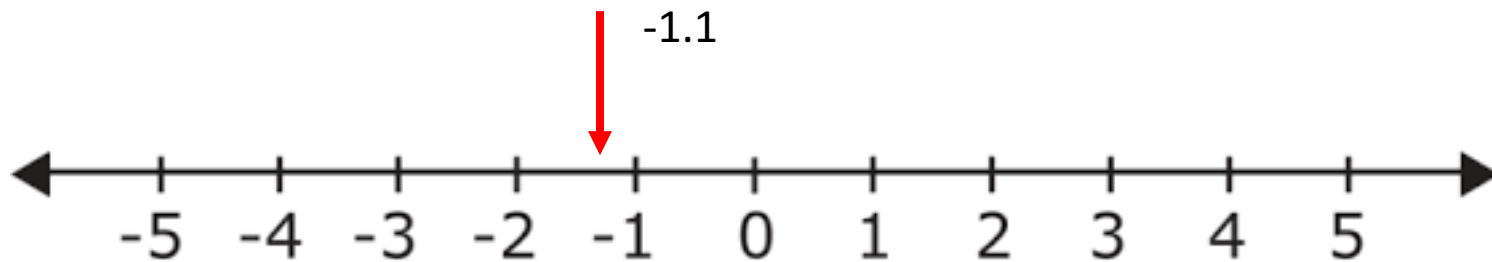


3 is the greatest integer less than 3.2

[x]

- The symbol [] means:
 - rounds the value of “x” to the greatest integer less than or equal to
 - round down

$$[-1.1] = -2$$

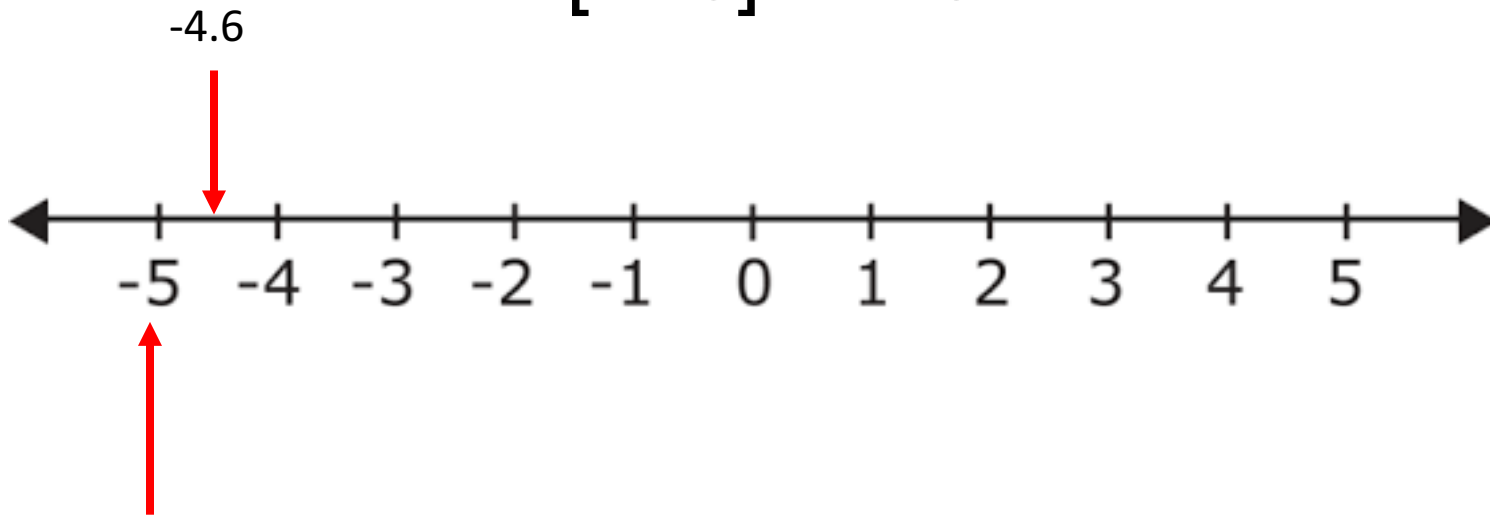


-2 is the greatest integer less than -1.1

[x]

- The symbol [] means:
 - rounds the value of “x” to the greatest integer less than or equal to
 - round down

$$[-4.6] = -5$$

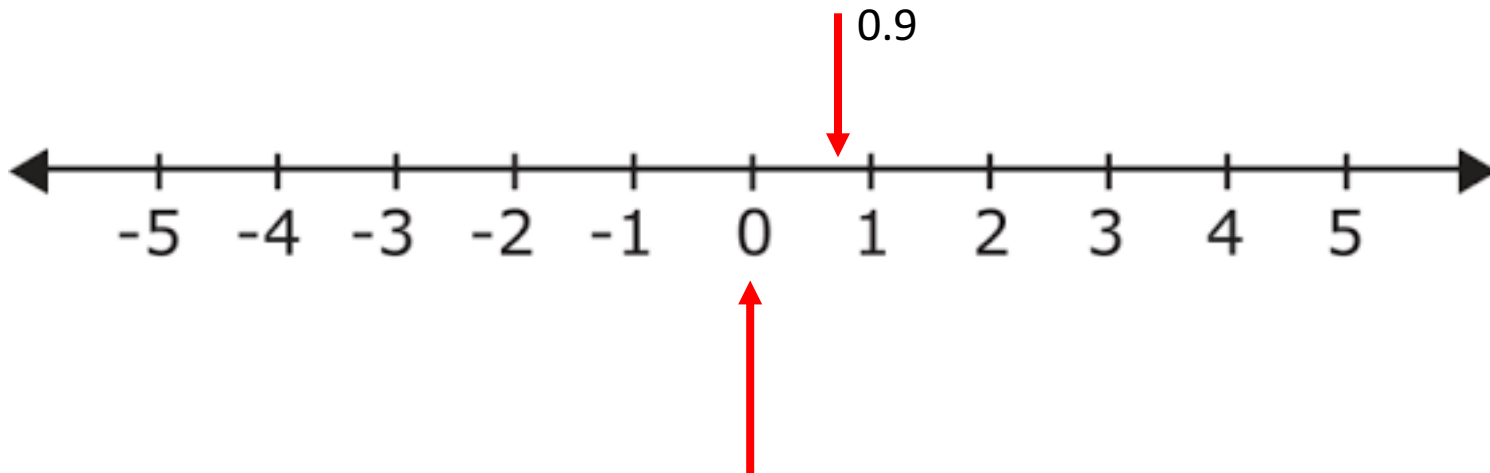


-5 is the greatest integer less than -4.6

[x]

- The symbol [] means:
 - rounds the value of “x” to the greatest integer less than or equal to
 - round down

$$[0.9] = 0$$



0 is the greatest integer less than 0.9

Given

$$y = -2[3(x-1)]+1$$

Find y if $x = -2.5$

$$y = -2[3(-2.5-1)]+1$$

$$y = -2[3(-3.5)]+1$$

$$y = -2[-10.5]+1$$

$$y = -2(-11)+1$$

$$y = 22+1$$

$$y = 23$$

Follow order
of operations
BEDMAS

 -11 is the greatest integer less than -10.5

Basic Step Function

$$f(x) = [x]$$

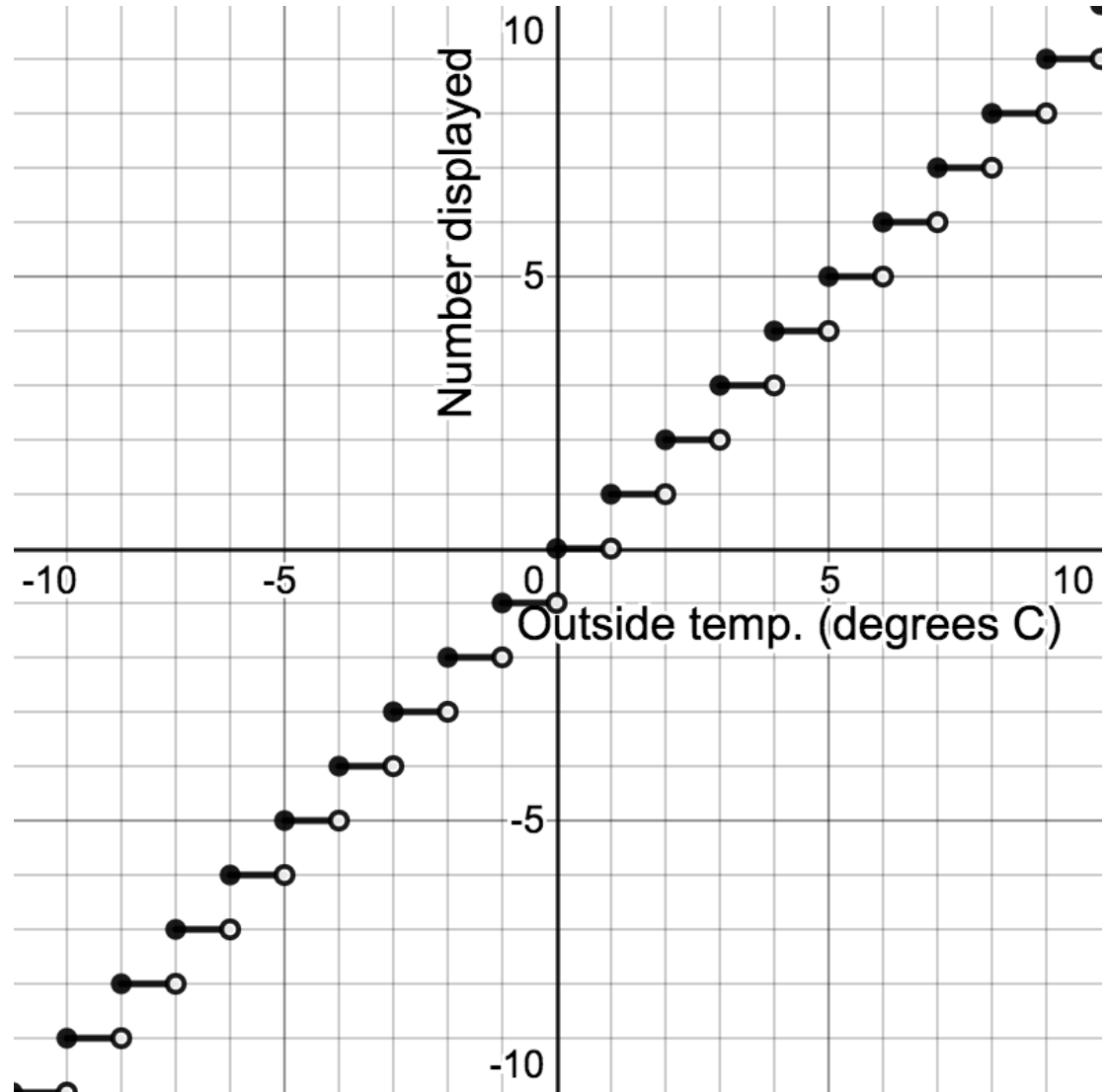
$$a = 1 \quad b = 1 \quad h = 0 \quad k = 0$$

Electronic Thermometer

Outside
Temperature
°C

Thermometer
Reading

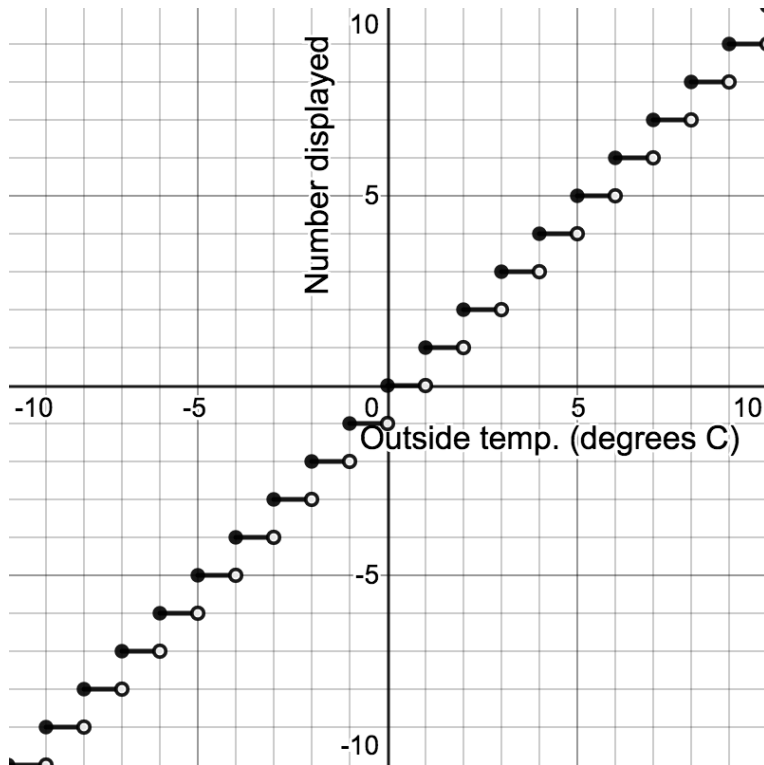
x	y
$[-5, -4[$	-5
$[-4, -3[$	-4
$[-3, -2[$	-3
$[-2, -1[$	-2
$[-1, 0[$	-1
$[0, 1[$	0
$[1, 2[$	1
$[2, 3[$	2
$[3, 4[$	3



Basic Step Function

$$f(x) = [x]$$

$$a = 1 \quad b = 1 \quad h = 0 \quad k = 0$$

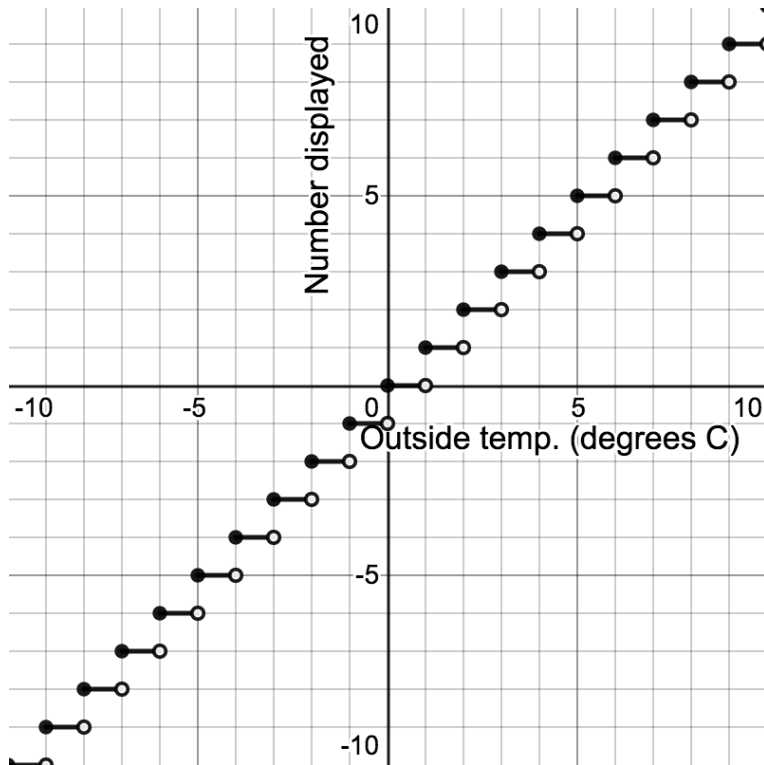


Domain	\mathbb{R}
Range	$\{\dots -3, -2, -1, 0, 1, 2\dots\}$
Zeroes (x – intercepts)	$[0, 1[$
y - intercept	0
Intervals of Increase	\mathbb{R}
Intervals of Decrease	\emptyset

Basic Step Function

$$f(x) = [x]$$

$$a = 1 \quad b = 1 \quad h = 0 \quad k = 0$$



Sign of the Function	Interval Function is positive	$[0, \infty[$
	Interval Function is negative	$] -\infty, 1[$
Extremes	Absolute Maximum	\emptyset
	Absolute Minimum	\emptyset
Image of 2.5	$f(2.5)$	2

A “step function” is:

- *constant at intervals, but abruptly changes for certain values of the independent variable, called critical values.*
- *The graph is formed of horizontal segments*
 - *at one end &*
 - *at the other.*

$$f(x) = [x]$$

Is called the basic step function.



or

