

11/15/12 - 11.1 cont.

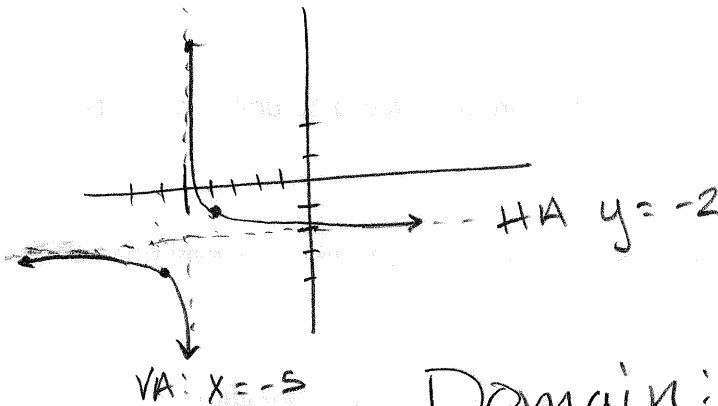
Mata 1010

Sec 11.1 cont.

Graph $f(x) = \frac{1}{x+5} - 2$

← -5 ↓ -2

Reciprocal



x	y
-4	$\frac{1}{-4+5} - 2 = \frac{1}{1} - 2 = 1 - 2 = -1$
-6	$\frac{1}{-6+5} - 2 = \frac{1}{-1} - 2 = -1 - 2 = -3$

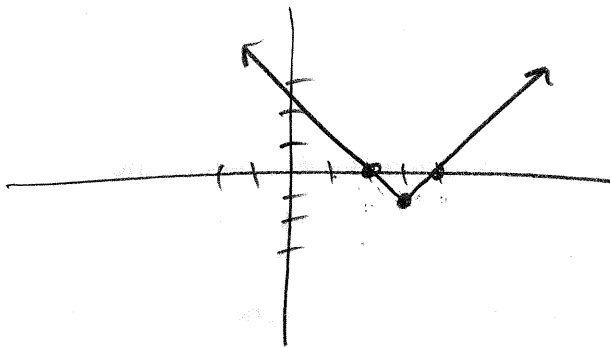
Domain: $\{x \mid x \neq -5\}$

Range: $\{y \mid y \neq -2\}$

Graph: $f(x) = |x-3| - 1$

→ 3 ↓ -1

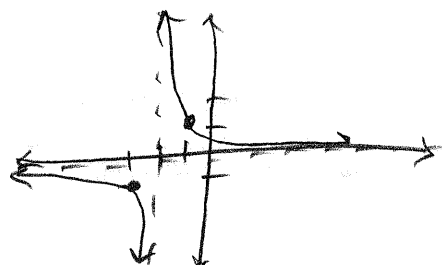
Absolute Value



#18 $f(x) = \frac{1}{x+2}$

D: $\{x \mid x \neq -2\}$

R: $\{y \mid y \neq 0\}$



Another Parent Function

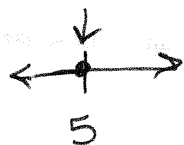
The Greatest Integer Function

$$f(x) = \lfloor x \rfloor \quad \text{or} \quad [x]$$

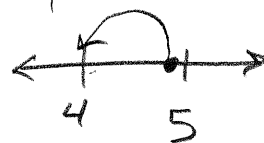
How does it work?

Pairs every Real Number x
with the greatest integer less than
or Equal to x

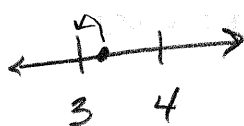
$$\lfloor 5 \rfloor = 5$$



$$\lfloor 4.9 \rfloor = 4$$



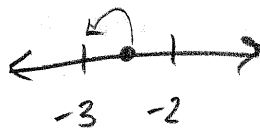
$$\lfloor 3.2 \rfloor = 3$$



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



$$\lfloor -2.5 \rfloor = -3$$

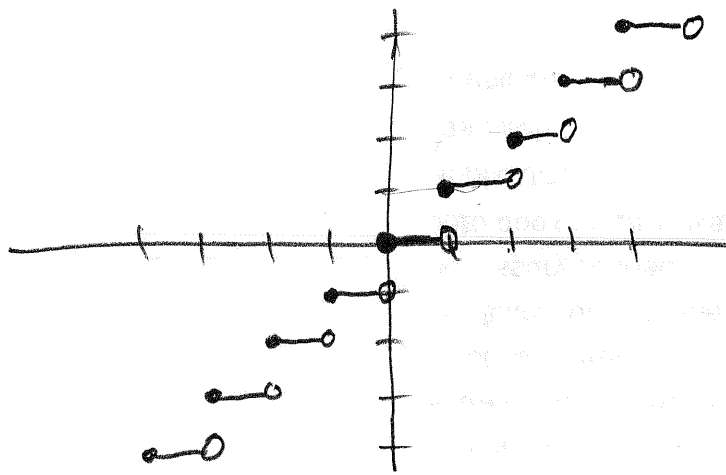


$$\lfloor 15.2 \rfloor = 15$$

$$\lfloor 1252.397 \rfloor = 1252$$

$$\lfloor -4.9 \rfloor = -5$$

Graph called a Step Function



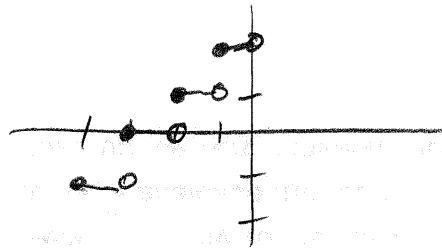
$$f(x) = [x]$$

$$D: (-\infty, \infty)$$

$$R: \{\dots, -3, -2, -1, 0, 1, 2, 3, \dots\}$$

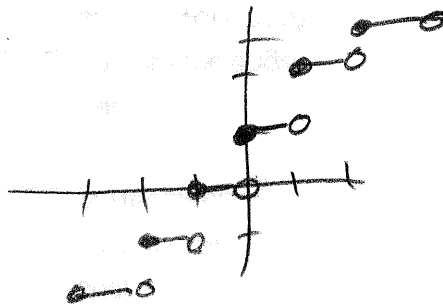
$$f(x) = [x + 3]$$

← -3



$$f(x) = [x] + 1$$

↑ 1



Change: $1 + [x]$