III. Graphing absolute value functions

Set up a table and graph:

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

$y = |x|$

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

III. Graphing absolute value functions Continued

Set up a table and graph:

10) $f(x) = |x| - 2$ shifted down 2

$|-2| - 2$
$2 - 2$

x	y
-2	0
-1	-1
0	-2
1	-1
2	0
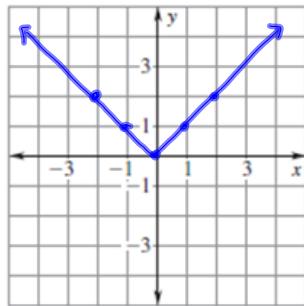
III. Graphing absolute value functions Continued

Set up a table and graph:

11) $f(x) = 2|x|$ increasing faster

$2|-2|$
$2(2)$
4

| x	y
-2	4
-1	2
0	0
1	2
2	4
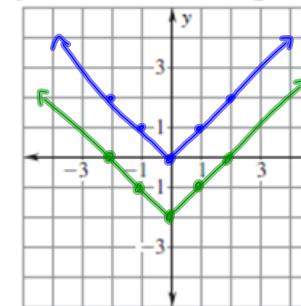
III. Graphing absolute value functions Continued

Set up a table and graph:

12) $f(x) = -2|x|$ reflected over the x-axis decreasing faster

$-2|-2|$
$-2(2)$
-4

x	y
-2	-4
-1	-2
0	0
1	-2
2	-4
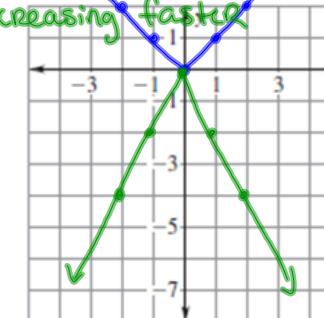
III. Graphing absolute value functions Continued

Set up a table and graph:

13) $f(x) = |x - 2|$

Note: extra points needed $|-2-2|$
$|-4|$
4

x	y
-2	4
-1	3
0	2
1	1
2	0
3	1
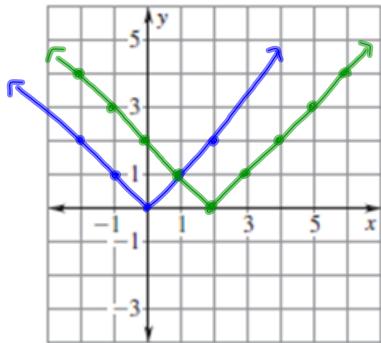
Graphing Summary

$f(x) = |x|$ (basic absolute function- V)
     parent function

$f(x) = |x| + k$ *(moves up or down)*
     $|x| - k$ (move down)

$f(x) = |x - h|$ *(moves left or right)*
     $|x + h|$ (move left)

$f(x) = a|x|$ *(open down if a is negative)*

     (makes skinny or wide- think like slope)

     $a > 1$ → increase faster, skinnier
     $a < 1$ → increase slower, wider