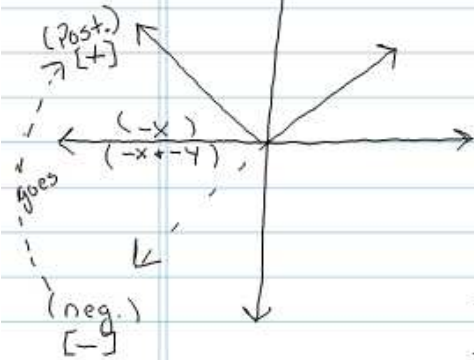


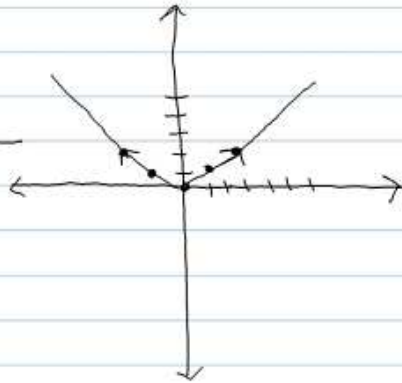
Absolute Value Function

$f(x) = |x|$  (always a positive value)

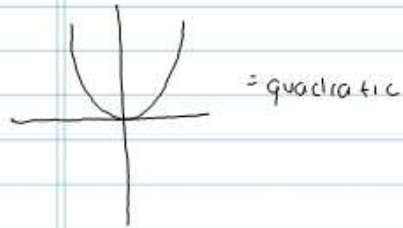
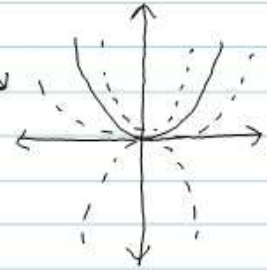


$f(x) = |x|$   
 [dis-regard]  $(y = |x-3|)$   
 $(y = |x-1|)$

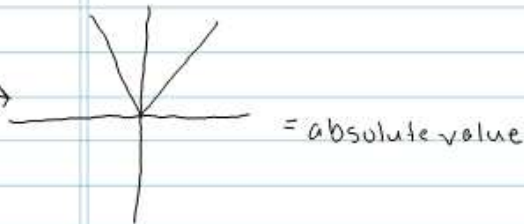
x	y
1	1
0	0
-1	1
-2	2
2	2



$f(x) = a(x-h)^2 + k$   
 $f(x) = a|x-h| + k$   
 $f(x) = |x-0| + 0$



similar



$f(x) = |x|$  ← mom and dad

[a]

$f(x) = a|x-h|+k$

$f(x) = 2|x|$

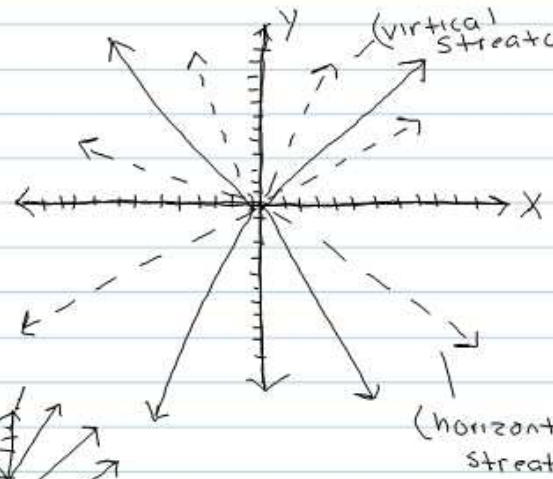
→ Vertical stretch

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

$f(x) = 1/2|x|$

→ horizontal stretch

[a = direction and shape  
↓  
same as quadratic function]



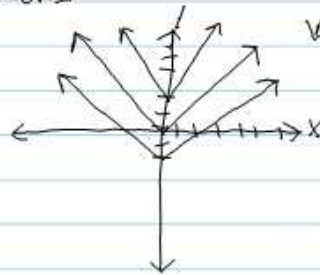
[k]

$f(x) = |x|$

$f(x) = a|x-h|+k$

$f(x) = |x|+3$  (↑ 3)

$f(x) = |x|-2$  (↓ 2)



domain = all real #'s  
range = all real #'s  
or ≥ zero

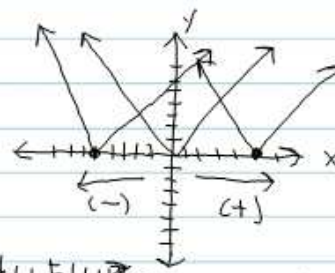
$f(x) = |x|$

$f(x) = a|x-h|+k$

$f(x) = a|x+5|+k$

(x-5)

(x+5)



$f(x) = 2|x-3|+4$

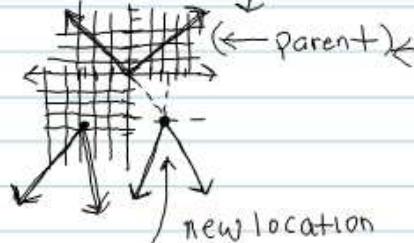
vertex = (3, 4)

$2|x+3|+4$

(3, 4)

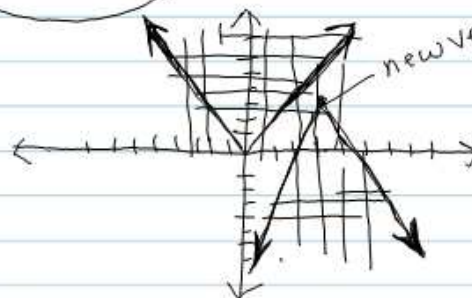
$f(x) = -2|x+3|-4$

$f(x) = -2|x-3|-4$



new location

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



new vertex

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

dirac. → ↑ ↓

shape h + ↓

(-) = down (3, 3)

-3

1

Ash

Cont.

10/3/11  
Alg II B3

$$f(x) = -\frac{1}{2}|x+2| + 3$$

$$h = -2 \rightarrow (-2, 3)$$

$$k = 3$$

new vertex

