Warm-up

1) Write direct variation for line thru $(2,-8)$ & $(0,0)$.

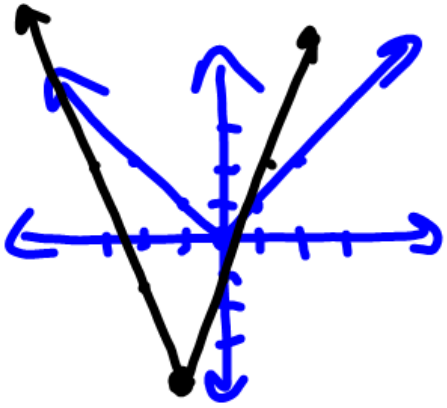
$y = mx \qquad m = \frac{-8}{2} = -4$

$y = -4x$

2) Find vertex for $y = 3|x+1| - 4$

left 1 down 4

$(-1, -4)$



2.8b Absolute Value

$y = a|x-h|+k$ becomes

$y > a|x-h|+k$
$<$
$\geq$
$\leq$

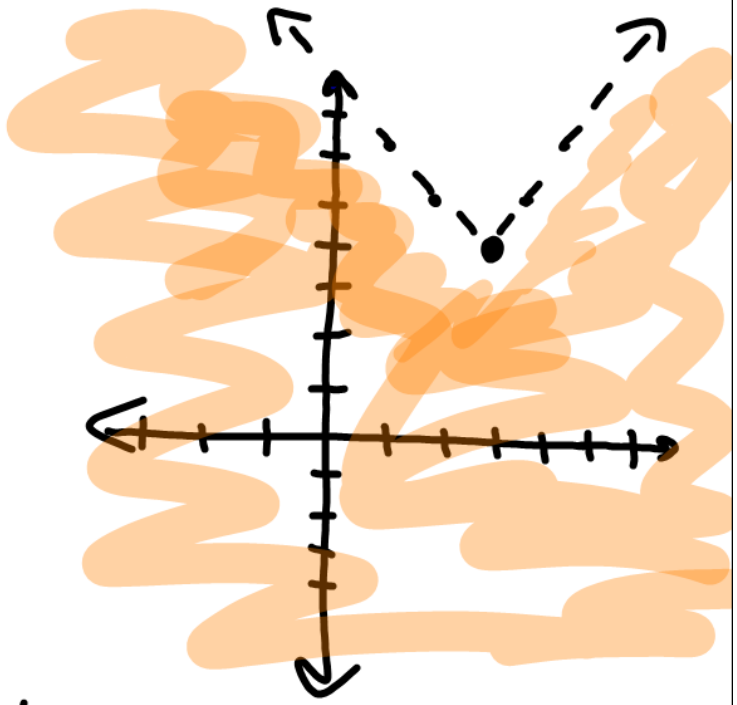
h → horizontal (opposite direction)

k → Vertical (Same as sign)

Graph

$$y < |x-3|+4$$

1st - Find the vertex
(3, 4)



2nd - Plot points using Slope & symmetry

3rd - Dashed line

4th - Test (0,0)

$0 < 3+4$
$0 < 7$

$0 > |0-3|+4$

$0 > |-3|+4$

$0 > 7$

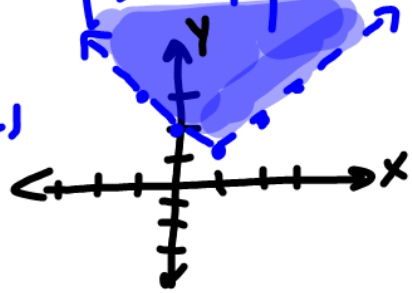
Homework

1) $y > |x-1|+1$

$0 > |0-1|+1$

$0 > 2$

no!



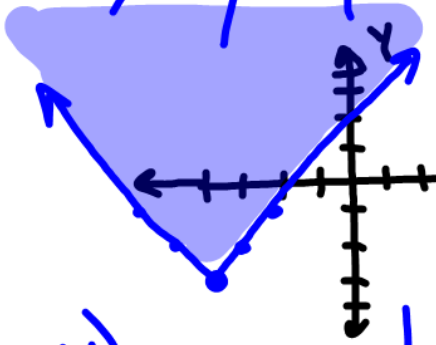
2) $y \geq |x+4|-3$

$0 \geq |0+4|-3$

$0 \geq 4-3$

$0 \geq 1$

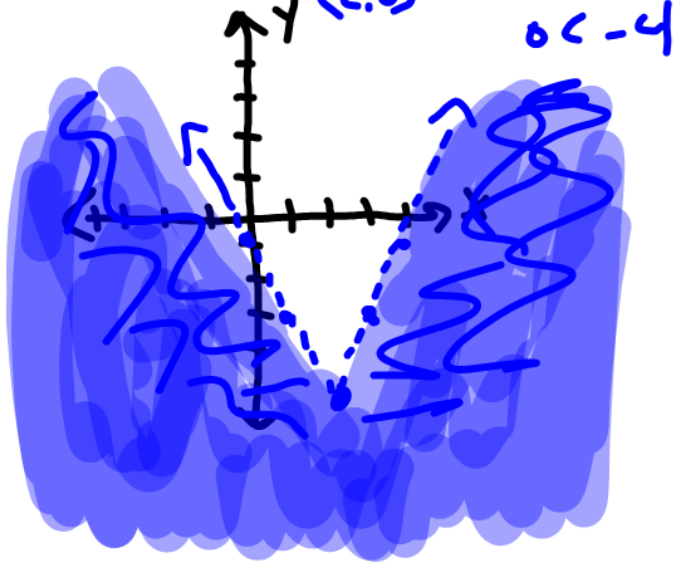
no!



3) $y < 2|x-2|-4$

(2,0)

$0 < -4$



4) $y > -|x+1|+2$

(-1,0)

$0 > -|-1+1|+2$

$0 > 0+2$

$0 > 2$

Nope