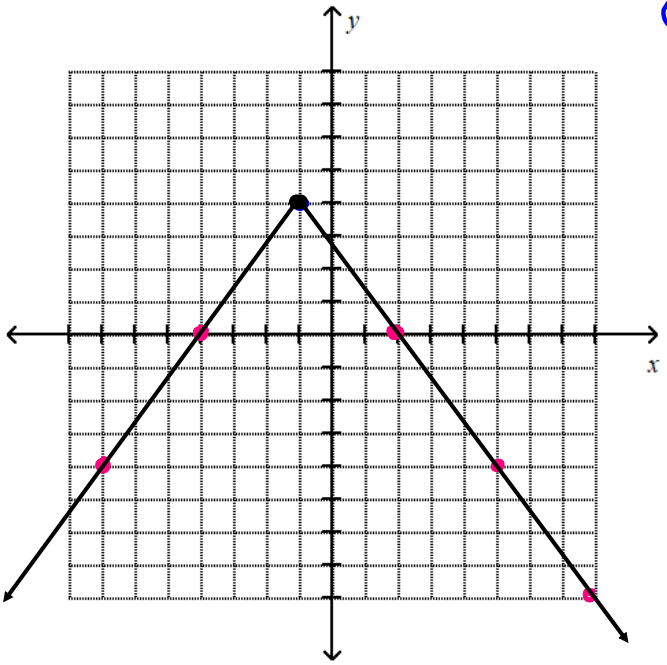
TEST REVIEW 2.6-2.8

$y = a|x-h| + k$ (h,k) vertex

1. Graph the equation. $y = -\frac{4}{3}|x+1|+4$

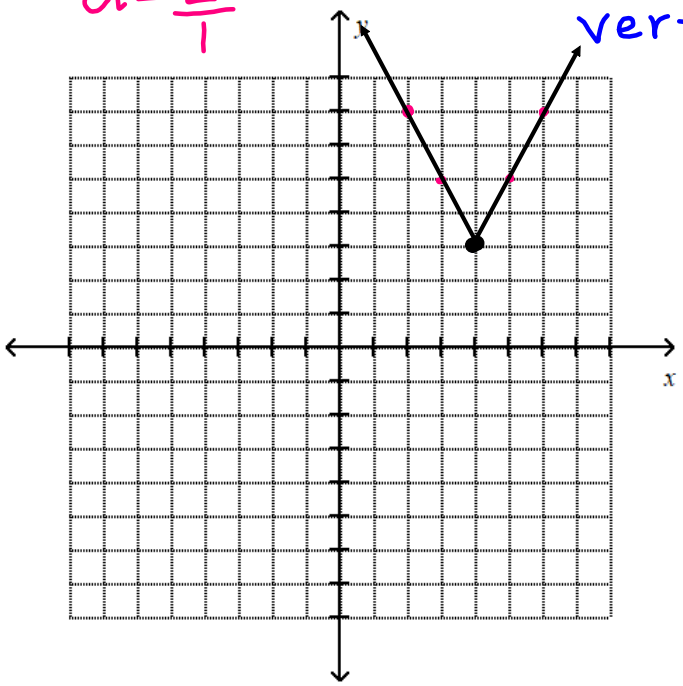
$a = -\frac{4}{3}$ opens ↓ $h = -1$ $k = 4$

(−1,4) vertex



2. Graph the equation. $y = 2|x-4|+3$

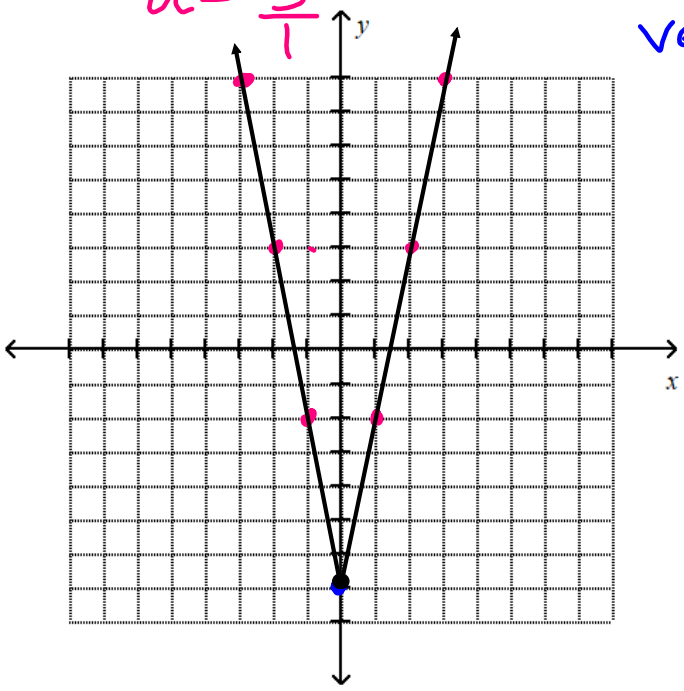
$a = \frac{2}{1}$ $h=4$ $k=3$ vertex $(4,3)$



$5|x+0|-7$

3. Graph the equation. $y = 5|x|-7$

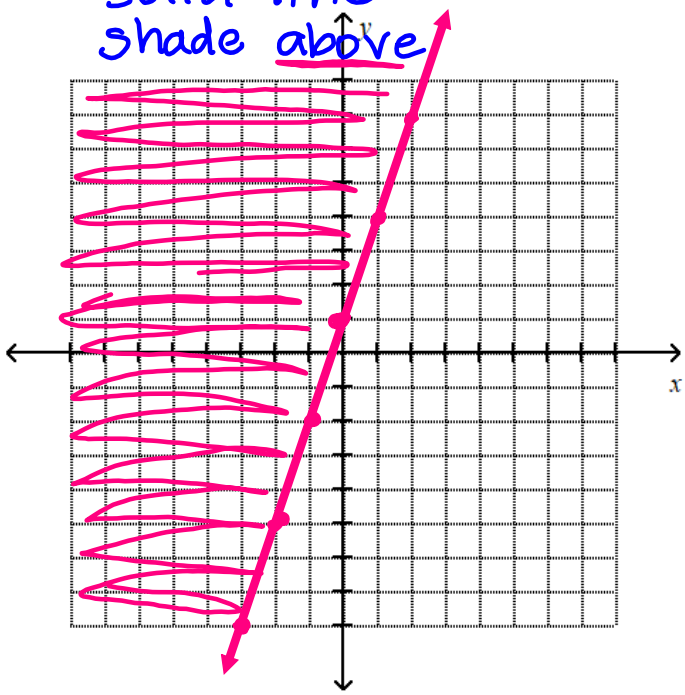
$a = \frac{5}{1}$ $h=0$ $k=-7$ vertex $(0,-7)$



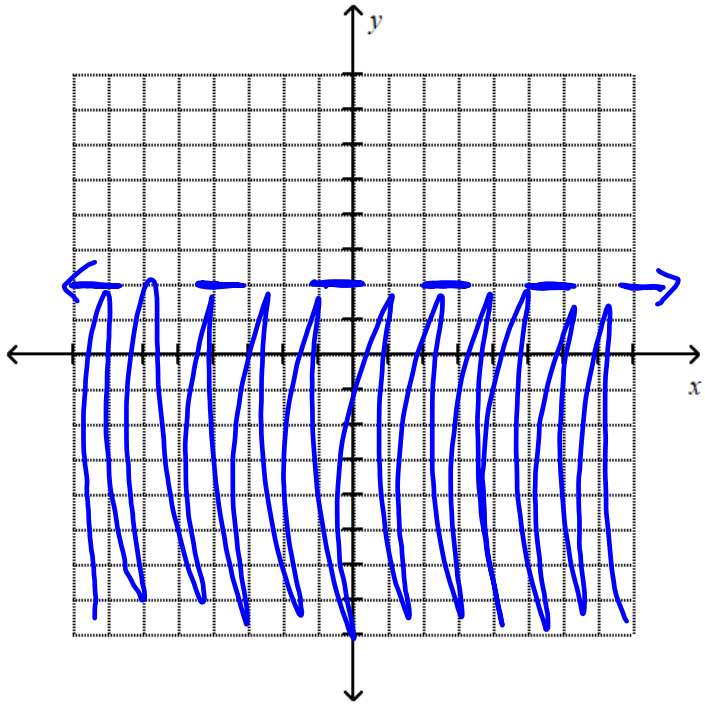
$mx+b$

4. Graph: $y \geq 3x+1$ $m = \frac{3}{1}$ y-int = 1

solid line
shade above



5. Graph: $y < 2$ dotted / shade below / horizontal



6. Rewrite in slope-intercept form and graph:

$2x - 3y \geq 6$

$-2x \quad -2x$

$\frac{-3y}{-3} \geq \frac{-2x}{-3} + \frac{6}{-3}$

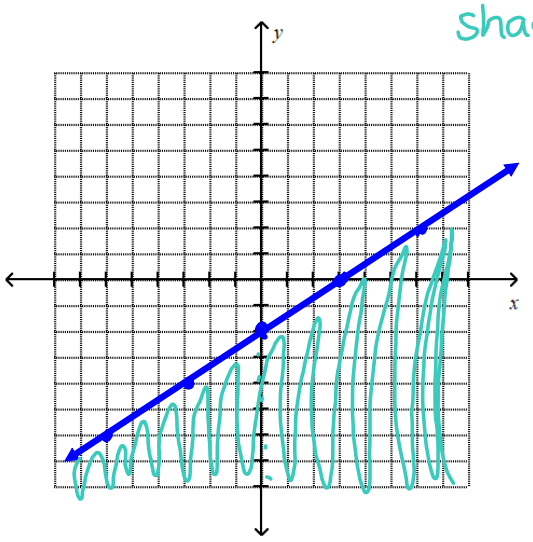
$y \leq \frac{2}{3}x - 2$

$m = \frac{2}{3}$

$y\text{-int} = -2$

Solid line

Shade below



7. Evaluate the following values given the piecewise function below:

$$k(x) = \begin{cases} \frac{3}{4}x - 5, & \text{if } x < 4 \\ -2x + 6, & \text{if } x \geq 4 \end{cases}$$

$-7 < 4$ ~~$5 < 4$~~ ~~$9 < 4$~~

~~$-7 \geq 4$~~ $4 \geq 4$ $9 \geq 4$

a) $k(-7) = \frac{3}{4}(-7) - 5 = -\frac{41}{4}$

b) $k(4) = -2(4) + 6 = -2$

c) $k(9) = -2(9) + 6 = -12$

8. Graph the piecewise function:

$$w(x)=\begin{cases}-x+5, & \text{if } x<3 \\ \frac{1}{2}x-6, & \text{if } x\geq 3\end{cases}$$

piece 1

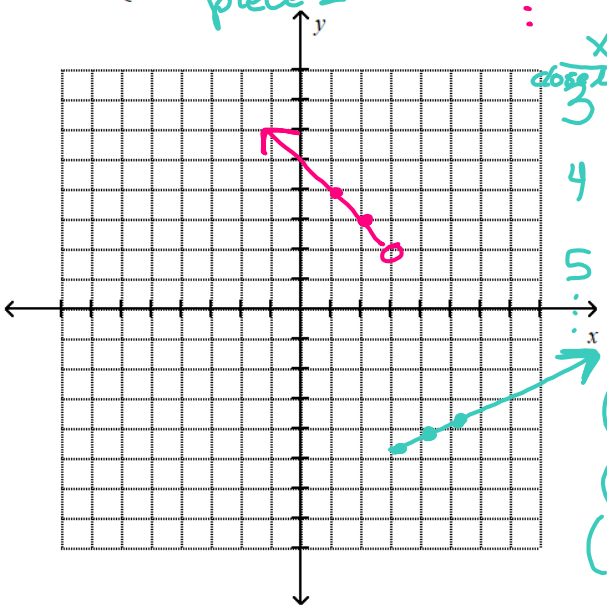
piece 2

x	y
3	$-3+5=2$ (3,2)
2	$-2+5=3$ (2,3)
1	$-1+5=4$ (1,4)

x	y
3	$\frac{1}{2}(3)-6=-\frac{9}{2}$
4	$\frac{1}{2}(4)-6=-4$
5	$\frac{1}{2}(5)-6=-\frac{7}{2}$

-4.5

-3.5



(3, -4.5)
(4, -4)
(5, -3.5)