

Graphing Inequalities

A2

type 1: on a number line

* only have 1 variable

ex $3x - 4 \geq 8$
 $+4 \quad +4$
 $3x \geq 12$
 $x \geq 4$

1st solve for x alone

* if multiplying or dividing by a negative you have to switch the sign.

remember : $<, > \rightarrow \circ$
 $\leq, \geq \rightarrow \bullet$



then graph

type 2: on a graph

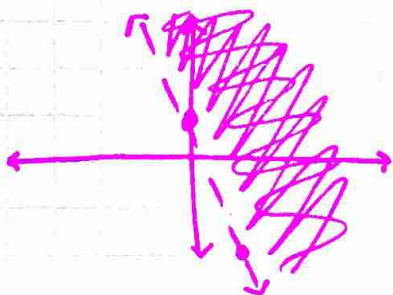
* have 2 variables

ex graph $2y > -6x + 2$

step 1: solve for y alone

$$y > -3x + 1$$

step 2: ignore the inequality & graph 2 pts on the line



pts \rightarrow step 2
dashed line \rightarrow step 3
shading \rightarrow step 4

important : $<, > \rightarrow$ dashed line
 $\leq, \geq \rightarrow$ solid line

step 3: now look at the inequality and connect the pts with a dashed or solid line

step 4: plug (0,0) or a point on either side of the line into the inequality to see if it's True or False

$$0 > -3(0) + 1$$

$$0 > 1 \text{ False}$$

* if false shade on the other side w/o the pt., if true shade w/ the pt.

• the feasible region is where shading overlaps.

ex

$$y \geq 2$$

$$y < 2x + 1$$

$$y < -\frac{1}{2}x + 4$$

