Solve Linear Inequalities in Two Variables

Graph Linear Inequality in Two Variables

Graph the related equation (replace inequality with =).

If the inequality is < or >, then draw a dashed line - - - -
If the inequality is $\leq$ or $\geq$, then draw solid line ————

Choose a test point from either side of the line (not a point on the line itself) and substitute the ordered pair into the inequality.

If a true statement results, then shade the region from which the point was taken.
If a false statement results, then *do not* shade the region from which the point was taken. (Shade the other side.)

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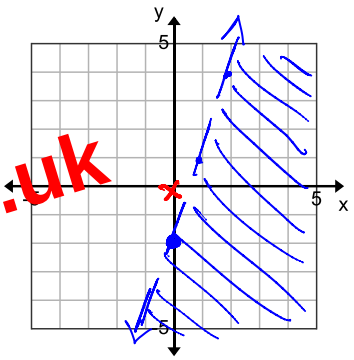
1. Graph the solution set. $y < 3x - 2$ use - - -

$y = 3x-2$
slope 3 y-int (0,-2)

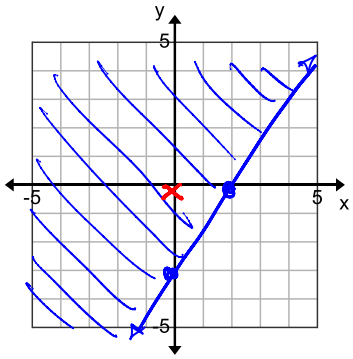
Test (0,0) x
$0 < 3(0)-2$
$0 < -2$ False
Shade other side



2. Graph the solution set. $3x - 2y \leq 6$ use ————

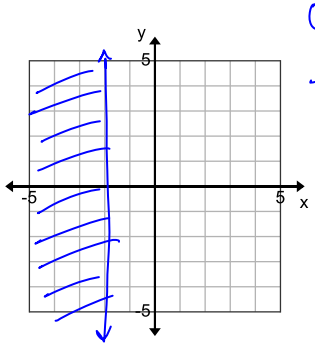
$3x-2y=6$
x-int (2,0)
y-int (0,-3)

Test (0,0) x
$3(0)-2(0) \leq 6$
$0 \leq 6$ True
Shade it



3. Graph the solution set. $x \leq -2$ use ————

$0 \leq -2$
false



4. Graph the solution set. $y > 3$ use - - -

$0 > 3$
false