

Algebra I

6-7

Graph Linear Inequalities in Two Variables

Tell whether the ordered pair is a solution of $3x - 4y > 9$.

1) (2,0)

$$3(2) - 4(0) > 9$$

$$6 - 0 > 9$$

$$6 > 9$$

No

2) (2,-1)

$$3(2) - 4(-1) > 9$$

$$6 + 4 > 9$$

$$10 > 9$$

Yes

2) Graph the inequality: $x + 2y < 8$

1) Get the equation into Slope/Intercept Form:

$$y = mx + b \quad m = -\frac{1}{2} \quad b = 4$$

2) Graph this boundary line:

a) for $<$ or $>$, use a dotted line.

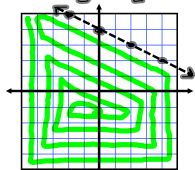
b) for \leq or \geq , use a solid line.

3) Shade the appropriate area:

a) if y is $>$ or \geq , shade above the boundary line.

b) if y is $<$ or \leq , shade below the boundary line.

c) if this is confusing to you, use a test point not on the line.



Each point in the shaded area is a solution.

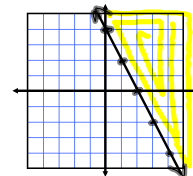
3) Graph $2y + 4x \geq 8$

$$2y + 4x - 4x \geq -4x + 8$$

$$\frac{2y}{2} \geq \frac{-4x + 8}{2}$$

$$y \geq -2x + 4$$

$$m = -\frac{2}{1} \quad b = 4$$



Assignment:

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1, 2-14 even,

15-24 all,

44-46 all