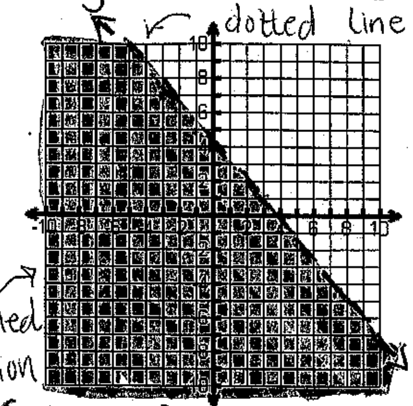
GSE Algebra I | Unit 2 – Solving Equations & Inequalities | 2.3 - Notes

Name: Key | Date: 1/30 per. 1/4

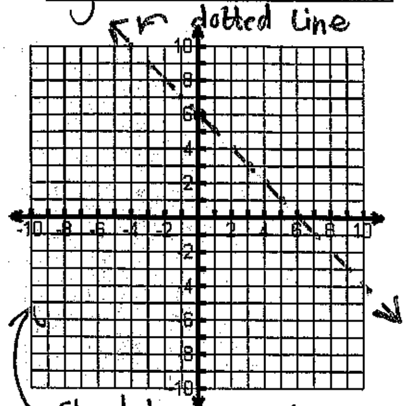
Graphing Systems of Inequalities Notes

Graphing systems allows us to see the shared solutions of a system. Let's explore together!

$y < -x + 4$



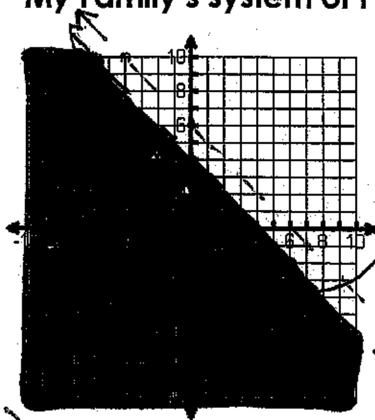
$y < -x + 6$



My Family's system of First Tens:

$y < -x + 4$

$y < -x + 6$



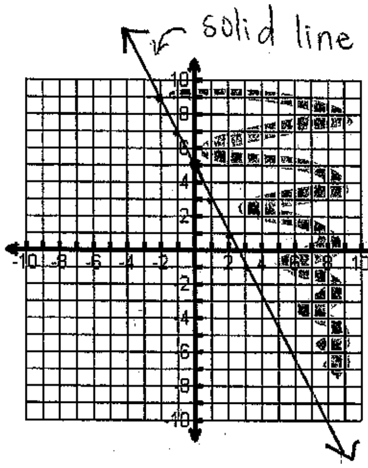
(0,0) is in the shaded region.

$0 < 0 + 4$ ✓

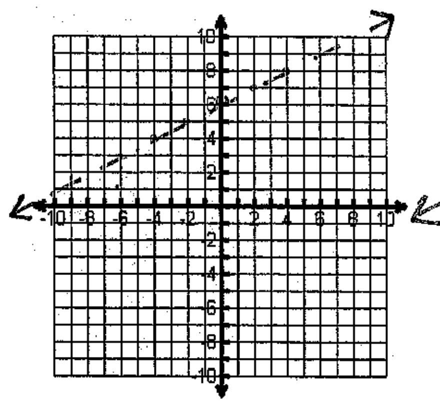
$0 < 0 + 6$ ✓

a Solution: (0, 0)

$y \geq -2x + 5$

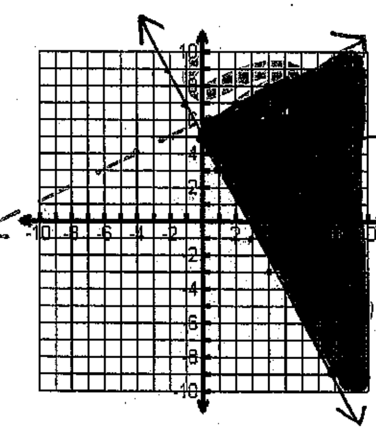


$y < \frac{1}{2}x + 6$



$y \geq -2x + 5$

$y < \frac{1}{2}x + 6$



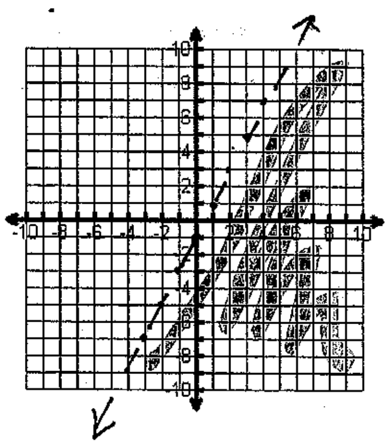
(8,4) is in the shaded region

$4 \geq -2(8) + 5$?

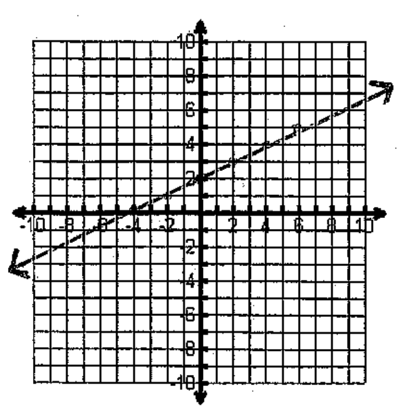
$4 < \frac{(8)}{2} + 6$?

a Solution: (8, 4)

$y < 2x - 1$

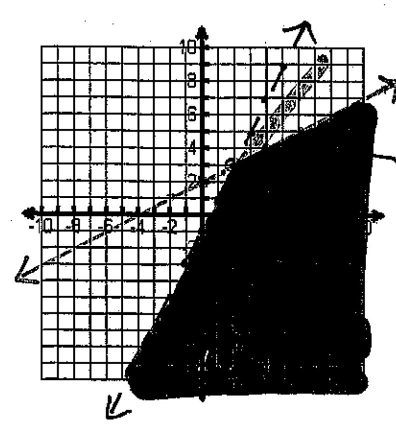


$y \leq \frac{1}{2}x + 2$



$y < 2x - 1$

$y \leq \frac{1}{2}x + 2$



(4,0) is in the shaded region

$0 < 2(4) - 1$?

$0 \leq \frac{1}{2}(4) + 2$?

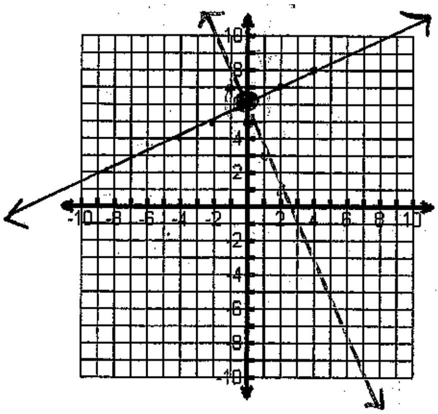
aSolution: (4, 0)

$$x = -\frac{2}{5} = -.04$$

$$y = \frac{29}{5} = 5.8$$

$y = -2x + 5$
$y = \frac{1}{2}x + 6$

solution



It looks like the solution is (0, 5). Let's try it!

$5 = -2(0) + 5$ ✓

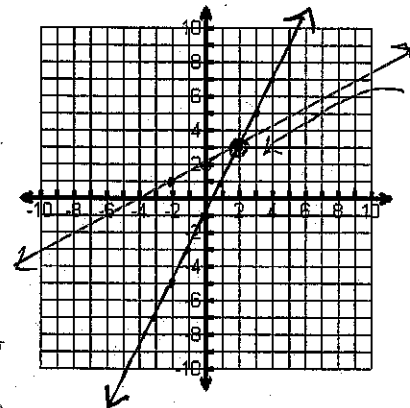
$5 = \frac{(0)}{2} + 6$?

$5 = 0 + 6$? → No.

Graphing isn't the best method...

Solution: $\left(-\frac{2}{5}, \frac{29}{5}\right)$

$y = 2x - 1$
$y = \frac{1}{2}x + 2$



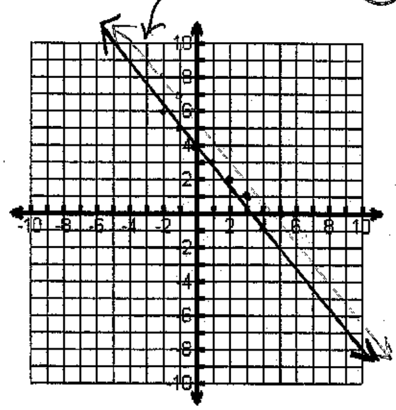
It looks like the solution is (2, 3). Let's try it!

$3 = 2(2) - 1$? ✓
$3 = (\frac{1}{2})(2) + 2$? ✓

Solution: (2, 3)

$y = -x + 4$
$y = -x + 6$

So sad. These lines never intersect.

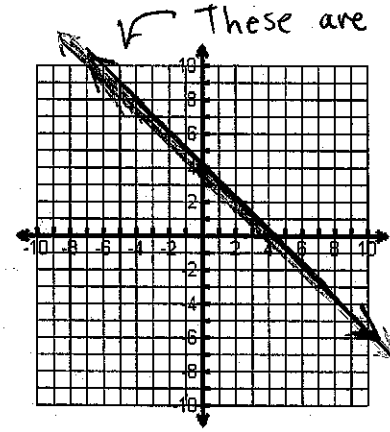


Solution: None

$y = -x + 4$
$2y = -2x + 8$

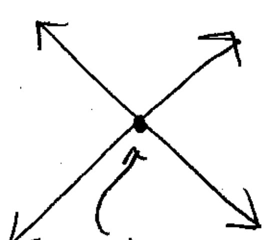
These are the same line.

Every point intersects!



Solution: infinitely many

What patterns did you see today?

What does a single solution like (2, 3) look like on a graph?	What does no solution look like on a graph?	What does infinitely many solutions look like on a graph?	What does a possible solution to a system of inequalities look like on a graph?
 solution