

Notes Sheet: Solving Linear Inequalities

Objective: to be able to graph linear inequalities

Three solutions to the inequality $y < x + 5$: (,) (,) (,)

Graphing Linear Inequalities

- Solve for y (get y by itself)
- graph the boundary line - dotted or solid
- shade above or below

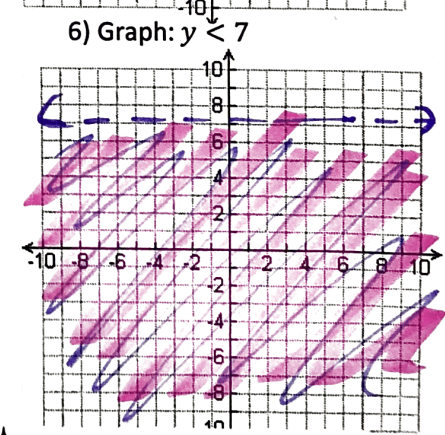
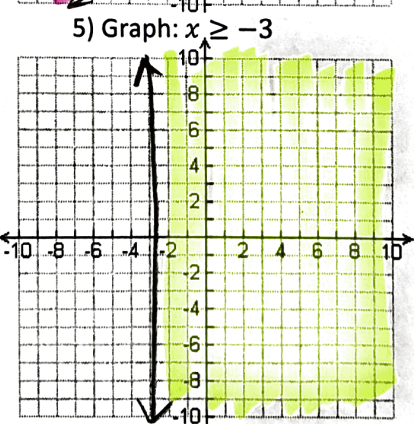
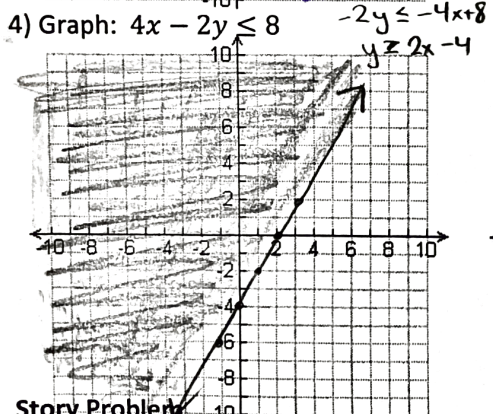
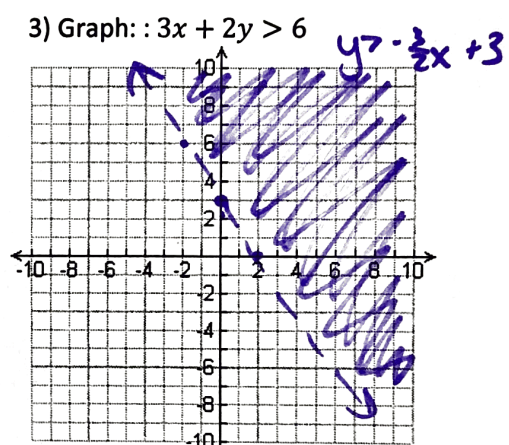
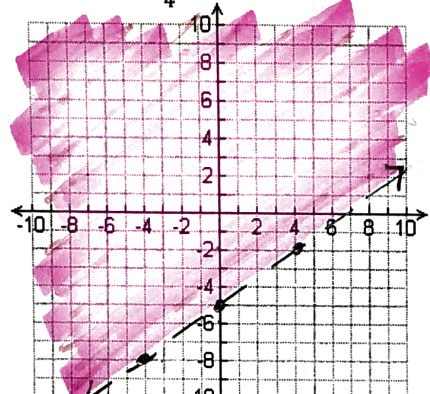
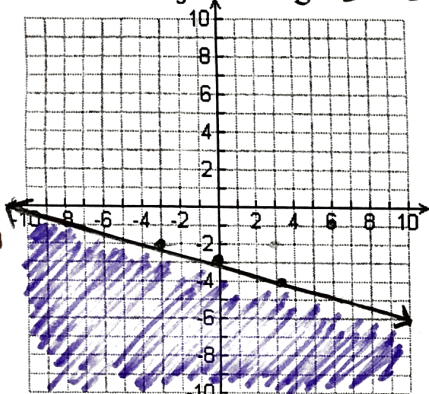
\leq or \geq solid line
 $<$ or $>$ dotted line

Tips

$y <$ or $y \leq$ shade below
 $y >$ or $y \geq$ shade above

(0,0)

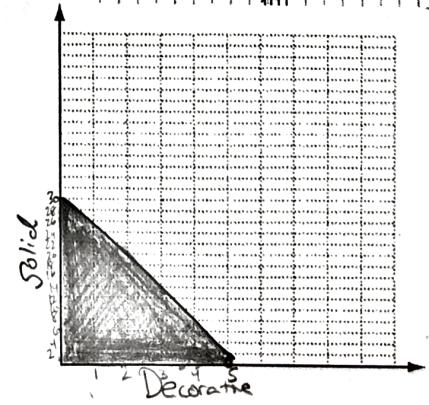
1) Graph: $y \leq -\frac{1}{3}x - 3$ $y = \frac{1}{3}x - 3$ 2) Graph: $y > \frac{3}{4}x - 5$



Story Problem

Adam is ordering helium balloons for his sister's birthday. He has up to \$15 to spend. Decorative balloons cost \$3.00 each and solid colored balloons cost \$0.50 each. Let x be the number of decorative balloons and y be the number of solid colored balloons that he buys.

- a. Write an inequality to describe the situation. $3x + 0.5y \leq 15$
- b. Graph the solutions.
- c. Give two possible combinations of decorative and solid colored balloons Adam can order.



Solving Linear Inequalities HW

Tell whether the ordered pair is a solution of the given inequality.

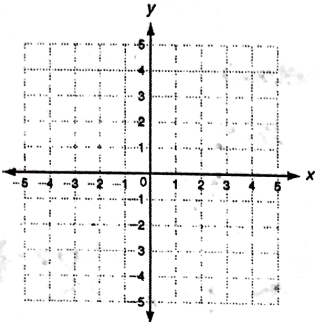
1. $(1, 6); y < x + 6$

2. $(-3, -12); y \geq 2x - 5$

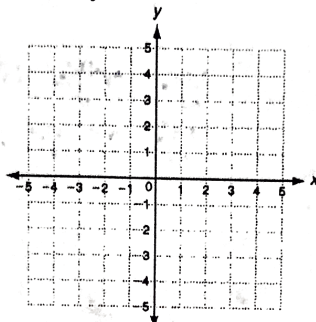
3. $(5, -3); y \leq -x + 2$

Graph the solutions of each linear inequality.

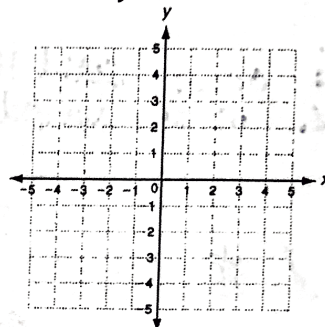
4. $y \leq x + 4$



5. $2x + y > -2$



6. $5x - 2y \leq 10$

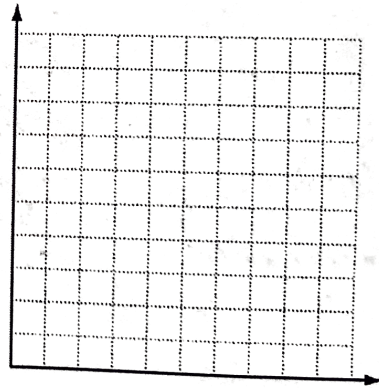


7. Clark is having a party at his house. His father has allowed him to spend at most \$20 on snack food. He'd like to buy chips that cost \$4 per bag, and pretzels that cost \$2 per bag.

a. Write an inequality to describe the situation.

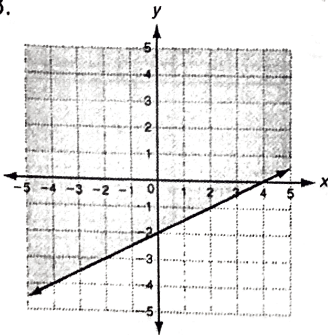
b. Graph the solutions.

c. Give two possible combinations of bags of chips and pretzels that Clark can buy.

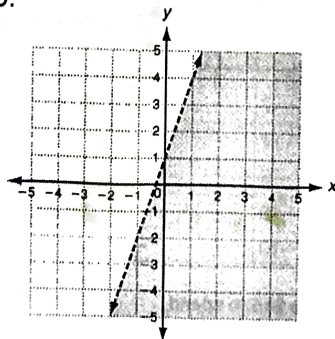


Write an inequality to represent each graph.

8.



9.



10.

