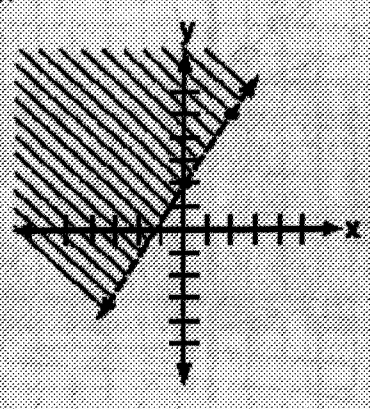
Name:
Integrated Algebra

Date:
Inequalities Review

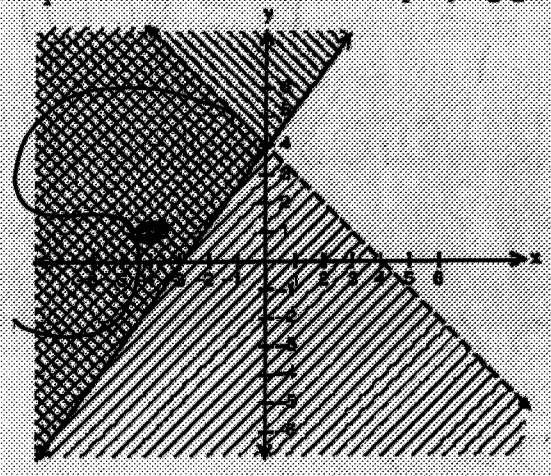
1. Which inequality is shown in the accompanying diagram?



(1) $y > \frac{3}{2}x + 2$
(2) $y < \frac{3}{2}x + 2$
(3) $y \geq \frac{3}{2}x + 2$
(4) $y \leq \frac{3}{2}x + 2$

$0 < \frac{3}{2}(0) + 2$ ✓

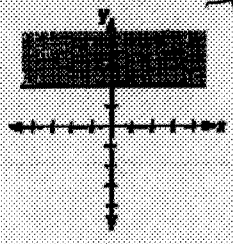
2. Which point is in the solution set of the system of inequalities shown in the accompanying graph?



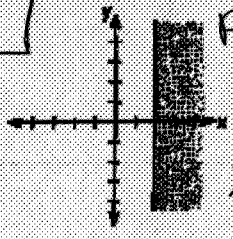
(1) (0,4)
(2) (2,4)
(3) (−4,1)
(4) (4,−1)

3. Which graph represents the inequality $x \geq 2$?

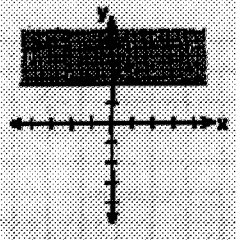
(1)



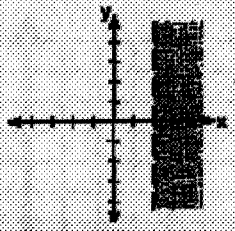
(3)



(2)



(4)

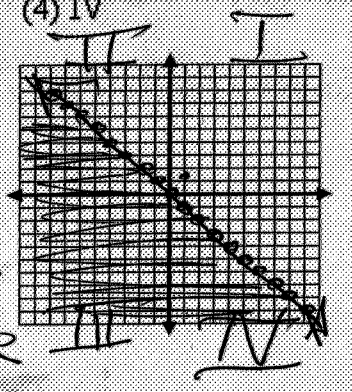


Pick (0,0)
x, y
$x \geq 2$
$0 \geq 2$
NOT TRUE

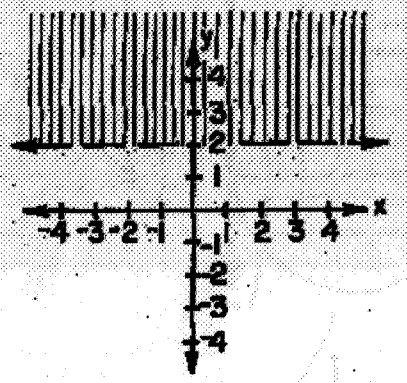
4. In the graph of $y \leq -x$, which quadrant is completely shaded?

(1) I
(2) II
(3) III
(4) IV

x, y
Pick (1, 1)
$y \leq -x$
$1 \leq -(1)$
$1 \leq -1$ NOT TRUE



5. The graph of which inequality is shown in the accompanying diagram?



x, y
(0,0)
$0 \geq 2$

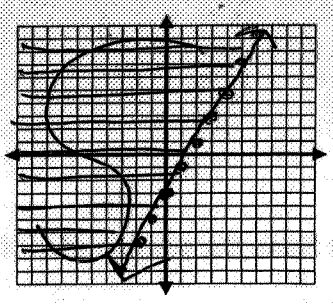
(1) $y > 2$
(2) $x > 2$
(3) $y \geq 2$
(4) $x \geq 2$

6. Which ordered pair is *not* in the solution set of $x - 2y \leq 6$?

$0 - 2(0) \leq 6$

(1) (2,−2)
(2) (5,1)
(3) (0,0)
(4) (1,−6)

$x - 2y \leq 6$
$-x \qquad -x$
$\frac{-2y}{-2} \leq \frac{-x}{-2} + \frac{6}{-2}$
$y \geq \frac{1}{2}x - 3$
$0 \geq \frac{1}{2}(0) - 3$
$0 \geq -3$



7. Graph the inequality $y \le -x + 7$

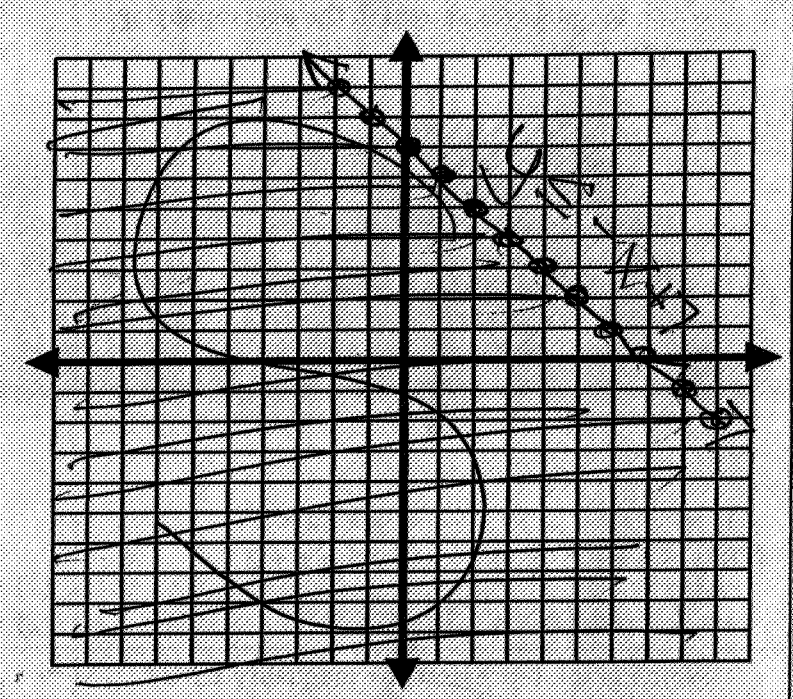
$m = \frac{-1}{1}$ $b = (0,7)$

Pick $(0,0)$

$y \le -x + 7$

$0 \le -(0) + 7$

$0 \le 7$



b) State the coordinates of a point in the solution set. $(2,3)$

8. Graph the inequality $x - y < 10$

$-x \quad -x$

$\frac{-y}{-1} < \frac{-x}{-1} + \frac{10}{-1}$

$y > x - 10$

$m = \frac{1}{1}$ $b = (0,-10)$

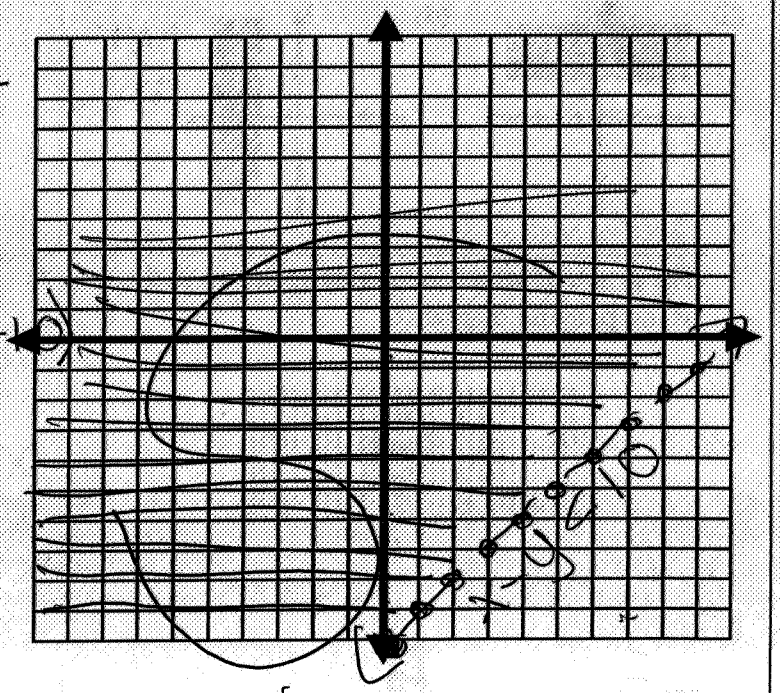
x, y

Pick $(0,0)$

$x - y < 10$

$0 - 0 < 10$

$0 < 10$



b) State the coordinates of a point in the solution set. $(1,-1)$

9. Graph the inequality $x + 2y \leq 8$

$-x \quad -x$

$\frac{2y}{2} \leq \frac{-x}{2} + \frac{8}{2}$

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

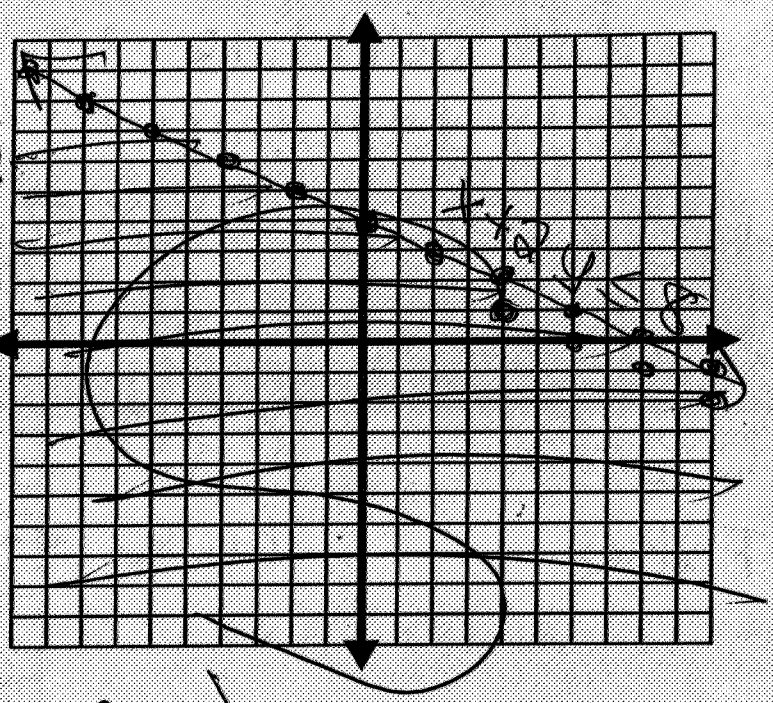
$m = -\frac{1}{2} \quad b = (0,4)$

Pick $(0,0)$

$x + 2y \leq 8$

$0 + 2(0) \leq 8$

$0 \leq 8$ True



b) State the coordinates of a point in the solution set. $(1,1)$

10. Graph the inequality $y > x - 3$

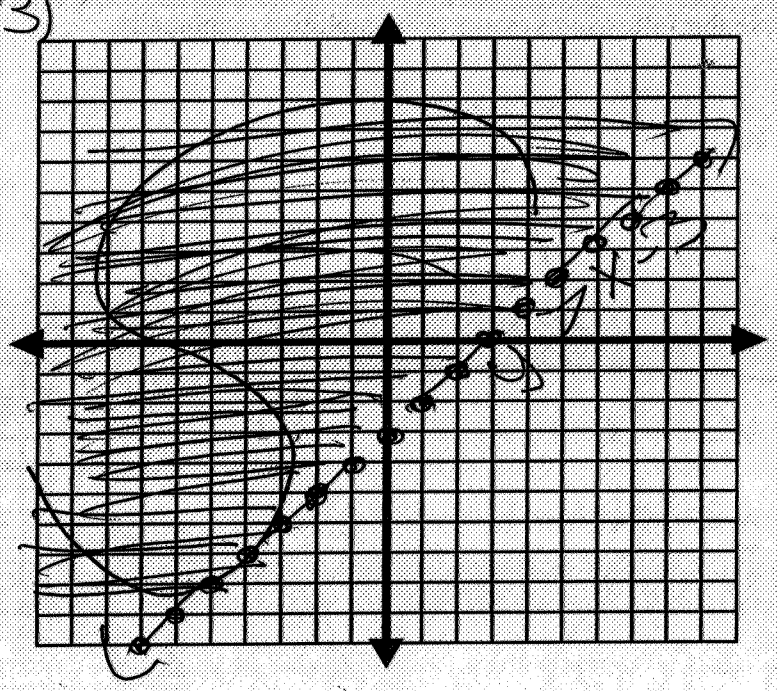
$m = \frac{1}{1} \quad b = (0,-3)$

Pick $(0,0)$

$y > x - 3$

$0 > (0) - 3$

$0 > -3$ True



b) State the coordinates of a point in the solution set. $(-2,2)$

11. Solve the following system of inequalities graphically:

solid line $y \le x-3$ $m=\frac{1}{1}$ $b=(0,-3)$

Pick (0,0) dotted line $y > x-7$ $m=\frac{1}{1}$ $b=(0,-7)$

$y \le x-3$

$0 \le 0-3$

$0 \le -3$

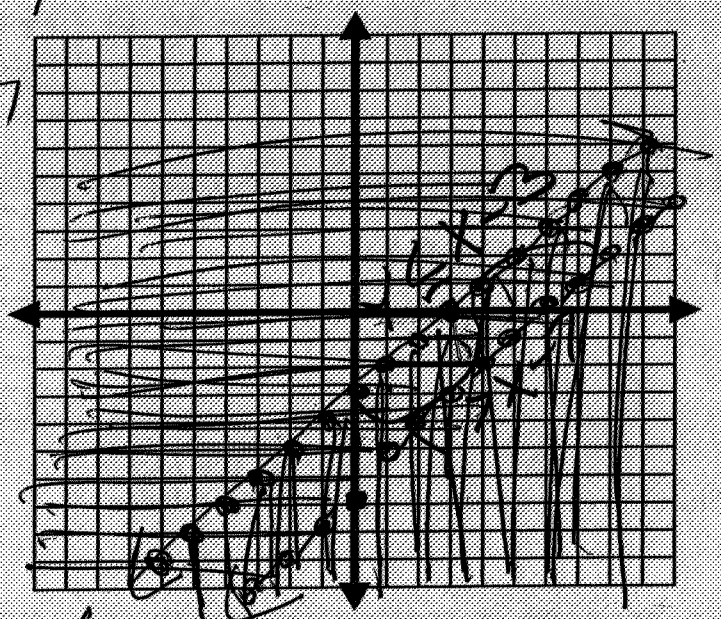
False

$y > x-7$

$0 > 0-7$

$0 > -7$

True



b) State the coordinates of a point in the solution set. (3,-2)

12. Solve the following system of inequalities graphically:

$$x+y \le 7$$

$$x+2y \le 8$$

$x+y \le 7$

$-x \quad -x$

$y \le -x+7$

$m=\frac{-1}{1}$ ↓ →

$b=(0,7)$

Pick (0,0)

$x+y \le 7$

$0+0 \le 7$

$0 \le 7$

$x+2y \le 8$

$-x \quad -x$

$\frac{2y}{2} \le \frac{-x+8}{2 \quad 2}$

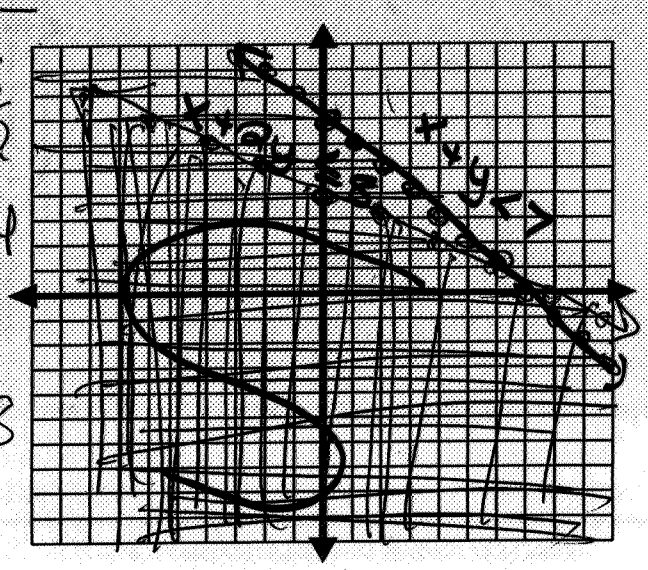
$y \le -\frac{1}{2}x+4$

$x+2y \le 8$

$0+2(0) \le 8$

$0+0 \le 8$

$0 \le 8$



b) State the coordinates of a point in the solution set. (-3,3