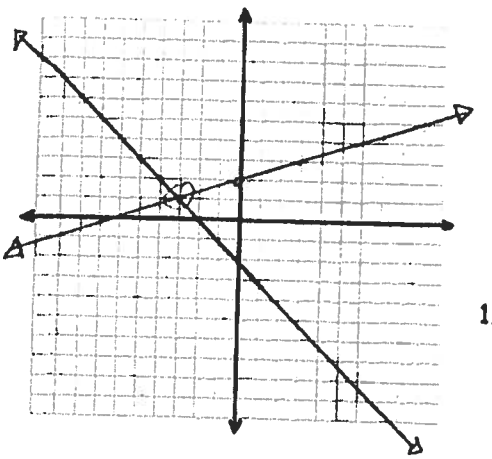
Name KEY

# Chapter 3 Review
## (Sections 3.1, 3.2, 3.3)

**Solve the following systems by graphing.**

1. $y = \frac{1}{3}x + 2$
   $y = -x - 2$

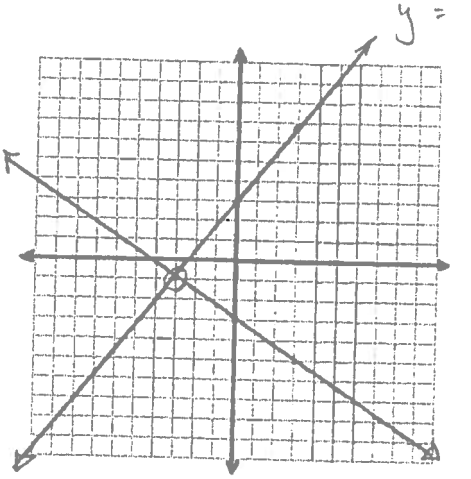


1. (-3, 1)

2. $-4x + 3y = 9$
   $2x + 3y = -9$

$y = \frac{4}{3}x + 3$

$y = -\frac{2}{3}x - 3$



2. (-3, -1)

**Solve the following systems by elimination.**

3. $x - y = 11$
   $2x + y = 19$

$3x = 30$ $\quad 10 - y = 11$

$x = 10$ $\quad -y = 1$

$y = -1$

3. (10, -1)

4. $-4x + 9y = 9$
   $(x - 3y = -6) \times 4$

$4x - 12y = -24$

$-3y = -15$

$y = 5$ $\quad x - 15 = -6$

$x = 9$

4. (9, 5)

**Solve the following systems by substitution.**

5. $y = x - 1$
   $2x - 3y = -1$

$y = 4 - 1 = 3$

$2x - 3(x-1) = -1$

$2x - 3x + 3 = -1$

$-x = -4$

$x = 4$

5. (4, 3)

6. $x + 3y = 1$
   $-3x - 3y = -15$

$x = 1 - 3y = 1 - 3(-2)$

$= 1 + 6$

$= 7$

$-3(1 - 3y) - 3y = -15$

$-3 + 9y - 3y = -15$

$6y = -12$

$y = -2$

6. (7, -2)

7. Without graphing, tell whether $(-3,3)$ is a solution of each system of equations below. Show your work.

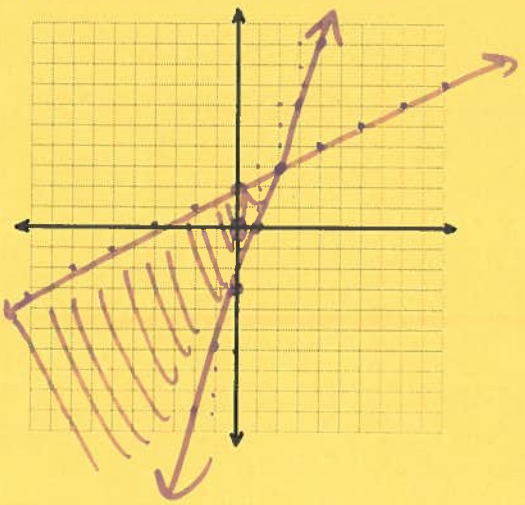
(a) $y \geq x+2$
$3y < -6x+6$

(b) $y-2x \leq 1$
$y < -2x-2$

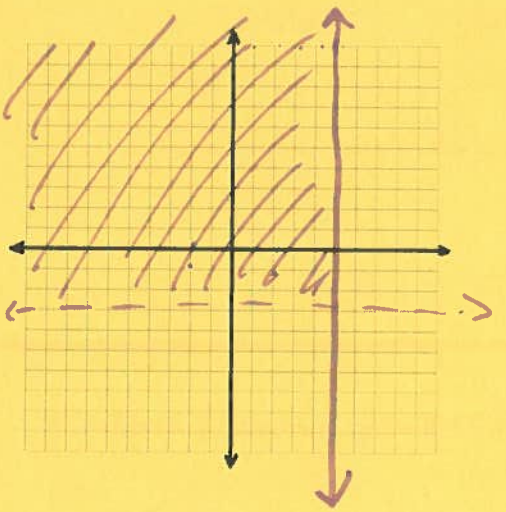
7.(a) yes
(b) NO

**Graph the systems of inequalities.**

12. $y \leq \frac{1}{2}x+2$
$y > 3x-3$



13. $y > -3$
$x \leq 5$



14. $2y-x \geq -4$
$3x-y < -2$

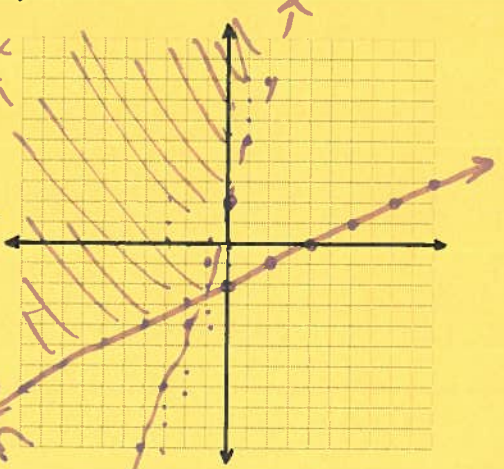
$\frac{2y}{2} \geq \frac{x}{2} - \frac{4}{2}$

$y \geq \frac{1}{2}x - 2$

$-y < -2 - 3x$

$y > 3x+2$

Switch the sign b/c you divide by a negative



15. Is the point (0, 0) a solution to the system in Question #12? yes

16. Is the point (2, -1) a solution to the system in Question #13? yes

17. Is the point (-3, 2) a solution to the system in Question #14? yes