

Study Guide – Unit 6
Systems of Equations – Algebra One

Name _____
 Date _____

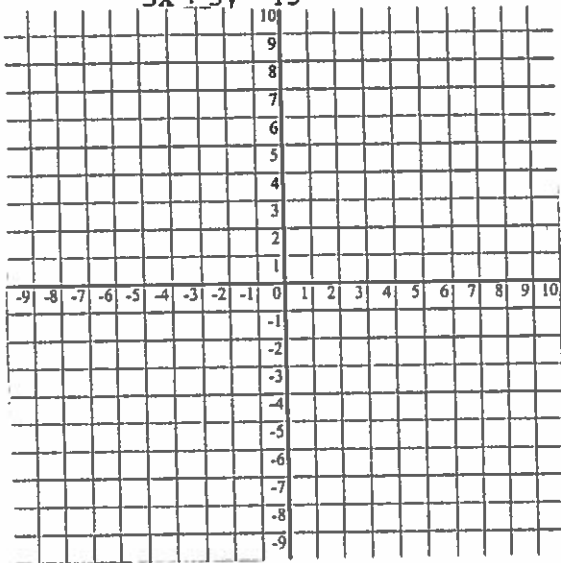
Use this study guide to prepare for the chapter 6 test. Also re-work problems on quizzes, homework & problems from your notes.

A) Solving Linear Systems by Graphing

Graph each system of equations – clearly state what the solution is for each.

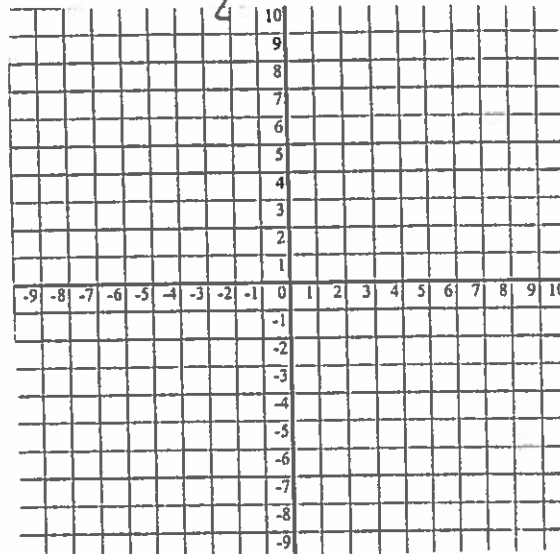
1) $x + y = 5$

$3x + 3y = 15$

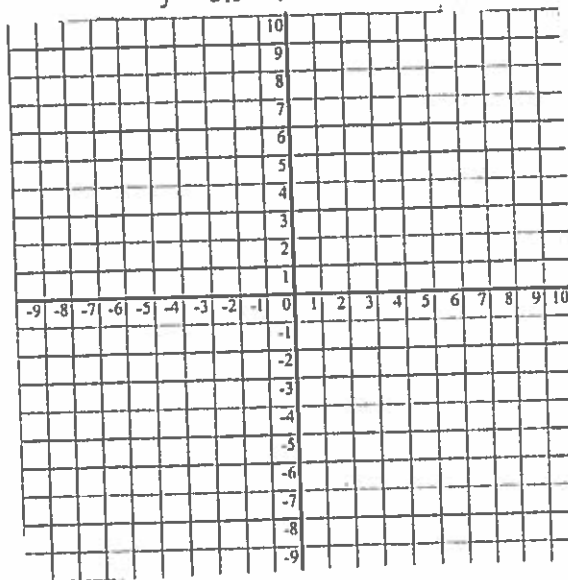


2) $y = \frac{3}{2}x + 6$

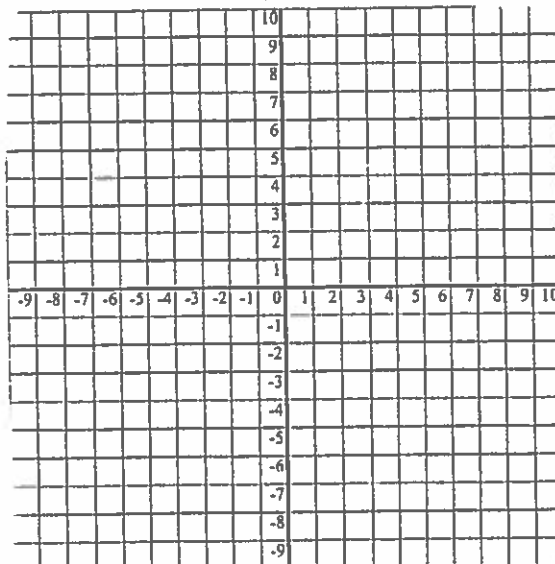
$y = \frac{1}{2}x + 4$



3) $-3x + y = 1$
 $y = 3x - 4$



4) $y = -x - 2$
 $2x - 3y = -9$



B) Checking Solutions of Systems of Equations – decide whether the ordered pair is a solution of the system. Show your checking work for each equation.

5) Is (5, 2) a solution of $3x - 2y = 11$
 $-x + 6y = 7$

6) Is (-2, 1) a solution of $6x - 3y = -15$
 $2x + y = -3$

7) Is (3, -6) a solution of $4x + y = 6$
 $x + 3y = 15$

8) Is (-4, -1) a solution of $-5x + y = 19$
 $x - 7y = 3$

C) Solving Linear Systems by SUBSTITUTION – you must be able to demonstrate solving a system using this method. Show clearly your substitution step. Show a check for each problem.

9) $x = 5y$
 $2x + 3y = -13$

10) $2a + 3b = 3$
 $a - 6b = -6$

D) Solving Linear Systems by ELIMINATION - you must be able to demonstrate solving a system using this method. Show a check for each problem.


$$\begin{aligned} 11) \quad & 3x + 3y = 6 \\ & 2x - 3y = 4 \end{aligned}$$

$$\begin{aligned} 12) \quad & x + 7y = 12 \\ & -5y + 3x = 10 \end{aligned}$$

E) Using any method to solve systems of equations. You need to solve these systems algebraically, but may use either substitution or linear combination. Show work clearly and be careful with special solutions. Show a check for each problem for which it is possible to show checks.

$$\begin{aligned} 13) \quad & 2x + y = 5 \\ & -6x - 3y = -15 \end{aligned}$$

$$\begin{aligned} 14) \quad & -6x + 2y = 4 \\ & -9x + 3y = 12 \end{aligned}$$





15) $5x + 6y = 11$
 $2x - 4y = -2$

16) $3x + 4y = 5$
 $y - 2x = 4$

17) $2a + b = 7$
 $3b + 4a = -10$

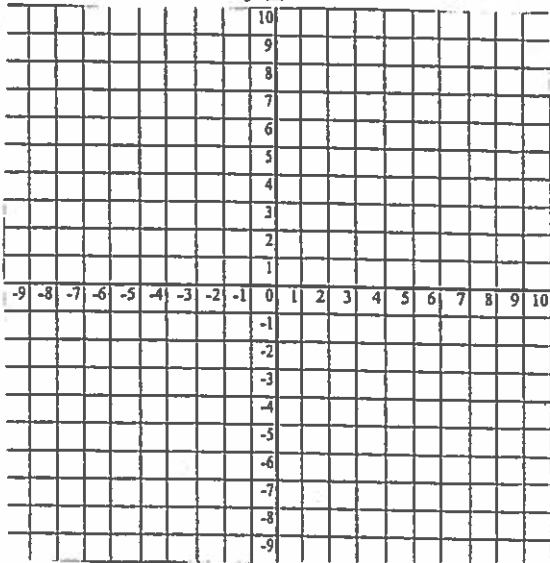
18) $7m + n = -2$
 $3m + n = 2$



G) Solving Systems of Linear Inequalities –solve each system on the provided graph, be sure you clearly indicated SOLID or DOTTED for the boundary lines.

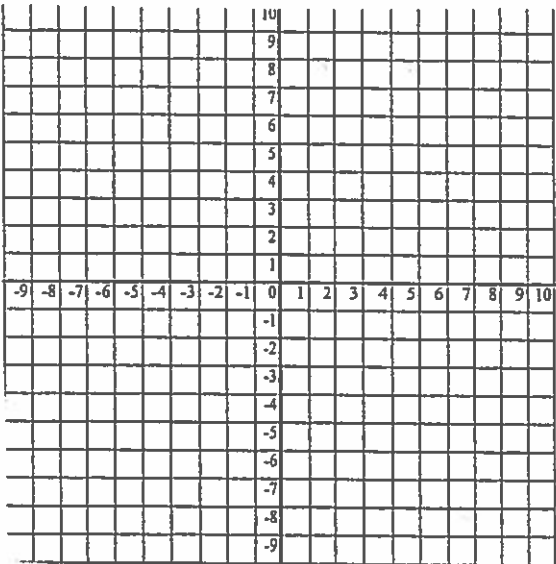
24) $2x + y < 4$

$-2x + y \leq 4$



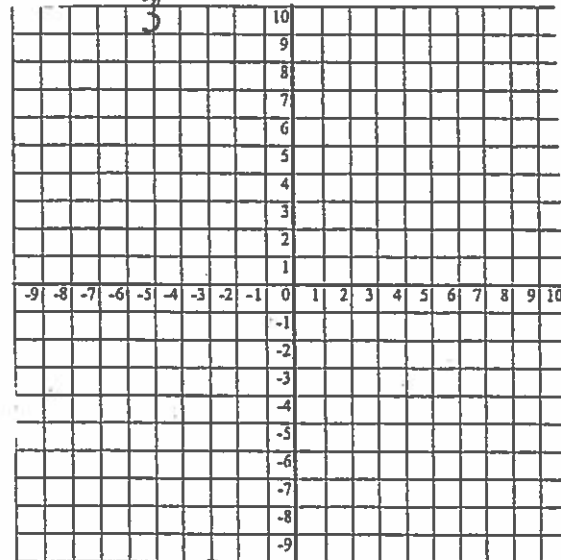
26) $x > 1$

$x + y \leq 5$



25) $y \geq 2x$

$y \leq -\frac{1}{3}x + 6$



27) $y < -x - 2$

$2y > 3x - 4$ careful on this one!

