

MIAMI DADE COLLEGE  
INTERAMERICAN CAMPUS  
MATHEMATICS DEPARTMENT  
MAT 1033.

STUDY GUIDE

SYSTEM OF LINEAR EQUATIONS

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Solve by the substitution method.

1)  $x + 5y = -5$

$8x + 4y = 32$

A)  $\{(4, -1)\}$

B)  $\{(-5, -1)\}$

C)  $\{(5, -2)\}$

D)  $\emptyset$

2)  $x + y = 4$

$5x + 5y = 20$

A)  $\{(2, 2)\}$

C)  $\{(0, 0)\}$

B)  $\{(4, 5)\}$

D) Infinite number of solutions

3)  $x + y = 2$

$x + y = 4$

A)  $\{(2, 4)\}$

B)  $\{(0, 6)\}$

C)  $\{(0, 0)\}$

D)  $\emptyset$

Clear fractions then solve by substitution.

4)  $\frac{1}{2}x + \frac{1}{2}y = 3$

$x - y = -8$

A)  $\{(-1, 7)\}$

B)  $\emptyset$

C)  $\{(1, 8)\}$

D)  $\{(-2, 8)\}$

Solve the system by the elimination method.

5)  $4x - y = 23$

$3x + y = 19$

A)  $\{(6, 1)\}$

B)  $\{(1, 6)\}$

C)  $\emptyset$

D)  $\{(6, 2)\}$

6)  $7x - 5y = 35$

$3x + 2y = 15$

A)  $\emptyset$

B)  $\{(4, 1)\}$

C)  $\{(5, 1)\}$

D)  $\{(5, 0)\}$

7)  $7x + 2y = 7 + 2x - 3y$

$2x + 5y = 4 - 4x$

A)  $\{(\frac{22}{5}, -3)\}$

B)  $\{(-\frac{1}{3}, \frac{5}{22})\}$

C)  $\{(-3, \frac{22}{5})\}$

D)  $\{(\frac{5}{22}, -\frac{1}{3})\}$

Solve the system by any method.

8)  $4x - \frac{5}{2}y = 10$

$4x - \frac{5}{3}y = \frac{40}{3}$

A)  $\emptyset$

B)  $\{(6, 3)\}$

C)  $\{(5, 4)\}$

D)  $\{(-5, 3)\}$

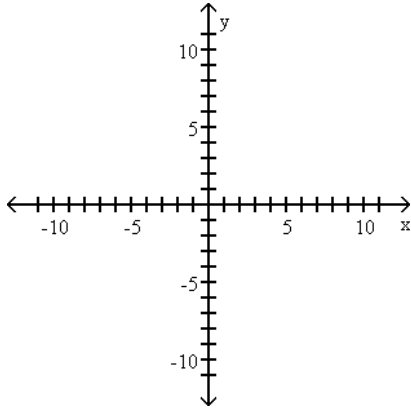
Solve the problem.

9) A woman made a deposit of \$329. If her deposit consisted of 97 bills, some of them one-dollar bills and the rest being five-dollar bills, how many one-dollar bills did she deposit?

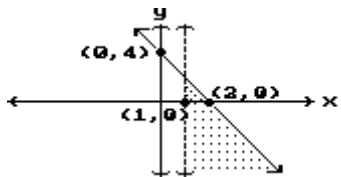
- A) 58 one-dollars      B) 34 one-dollars      C) 39 one-dollars      D) 29 one-dollars

Graph the system of inequalities. Indicate the solution by shading.

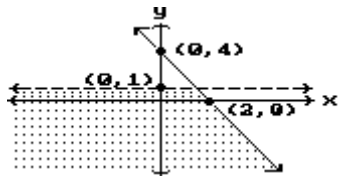
10)  $2x + y \leq 4$   
 $x - 1 > 0$



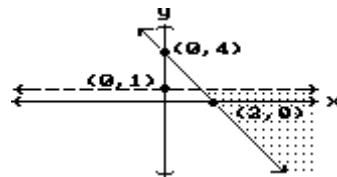
A)



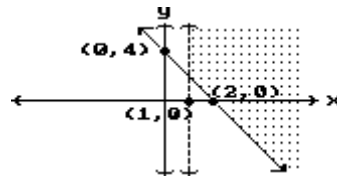
C)



B)



D)



Solve the system by any method.

11)  $\frac{3x}{8} - \frac{3y}{5} = \frac{33}{80}$

$\frac{4x}{7} + \frac{4y}{5} = \frac{37}{35}$

A)  $\{(\frac{3}{2}, \frac{1}{4})\}$

B)  $\{(\frac{1}{4}, \frac{1}{2})\}$

C)  $\{(\frac{3}{2}, \frac{3}{4})\}$

D)  $\{(\frac{3}{4}, \frac{1}{2})\}$

Solve the problem.

12) In a chemistry class, 3 liters of a 4% silver iodide solution must be mixed with a 10% solution to get a 6% solution. How many liters of the 10% solution are needed?

- A) 0.5 L      B) 3.0 L      C) 1.5 L      D) 2.5 L

Provide an appropriate response.

- 13) Decide whether the elimination method or the substitution method involves the least amount of work. Do not solve.

$$7x - 6y = -80$$

$$-9x + 7y = 100$$

A) Elimination

B) Substitution

- 14) Solving for which variable in which equation involves the least amount of work?

$$x + 9y = 0$$

$$x - 9y = 36$$

A) x in equation 1

B) x in equation 2

C) y in equation 2

D) y in equation 1

Decide whether or not the ordered pair is a solution of the system.

- 15) (5, -3)

$$3x + y = 12$$

$$4x + 3y = 11$$

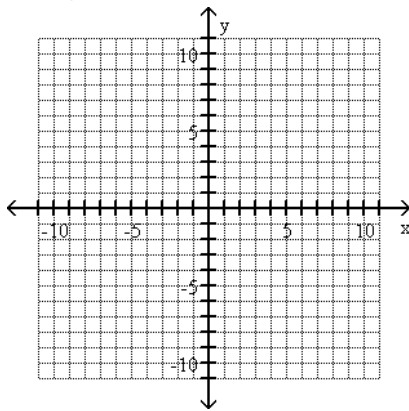
A) No

B) Yes

Solve the system by graphing.

16)  $4x + y = 18$

$$x + 6y = 39$$



A)  $\{(3, 2)\}$

B)  $\{(-3, 6)\}$

C)  $\{(3, 6)\}$

D)  $\{(6, -6)\}$

Without solving, tell if the system is inconsistent, the equations are dependent, or neither.

17)  $x + 5y = 13$

$$4x - 6y = 0$$

A) Inconsistent

B) Dependent

C) Neither

Decide if the graph of the system is a pair of parallel lines, intersecting lines, or one line.

18)  $x + 3y = 8$

$$2x + 6y = 16$$

A) Parallel

B) One Line

C) Intersecting

Clear fractions then solve by substitution.

$$19) \frac{3x}{8} - \frac{3y}{5} = \frac{33}{80}$$

$$\frac{4x}{7} + \frac{4y}{5} = \frac{37}{35}$$

A)  $\left\{ \left( \frac{1}{4}, \frac{1}{2} \right) \right\}$

B)  $\left\{ \left( \frac{3}{4}, \frac{1}{2} \right) \right\}$

C)  $\left\{ \left( \frac{3}{2}, \frac{3}{4} \right) \right\}$

D)  $\left\{ \left( \frac{3}{2}, \frac{1}{4} \right) \right\}$

Solve the system by the elimination method.

$$20) \quad x - 7y = 1$$

$$\quad -3x - 6y = -3$$

A)  $\{(2, 1)\}$

B)  $\{(2, -1)\}$

C)  $\{(1, 0)\}$

D)  $\emptyset$