

1. For each ordered pair, determine whether it is a solution to the system of equations.

$$\begin{cases} 8x - 2y = 6 \\ y = 4x - 3 \end{cases}$$

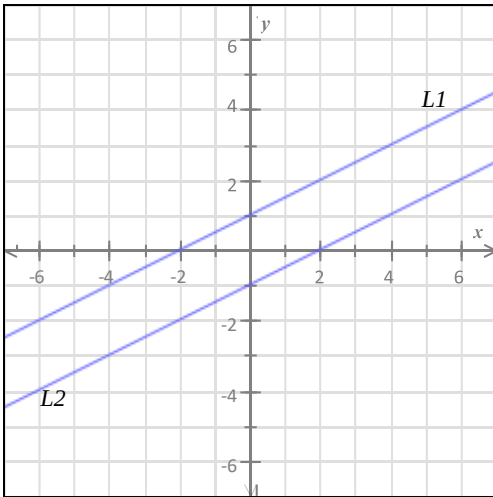
(x, y)	Is it a solution?	
	Yes	No
$(5, 17)$	☐	☒
$(0, 7)$	☐	☒
$(3, -1)$	☐	☒
$(-2, -11)$	☒	☐

2.

For each system of linear equations shown below, classify the system as "consistent dependent," "consistent independent," or "inconsistent." Then, answer the question about its solutions.

$$L1: y = \frac{1}{2}x + 1$$

$$L2: y = \frac{1}{2}x - 1$$



This system of equations is:

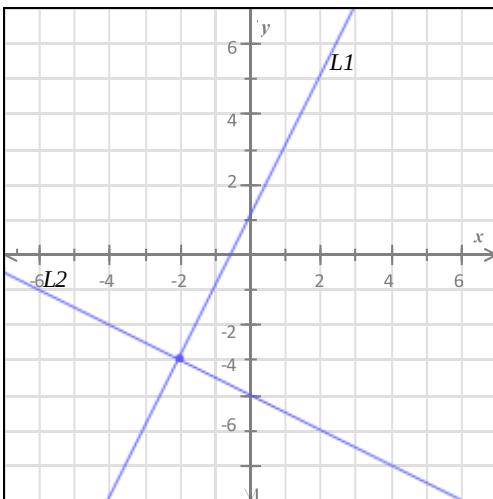
-inconsistent

This means the system has:

- no solution

L1: $y = 2x + 1$

L2: $y = -\frac{1}{2}x - 4$



This system of equations is:

-consistent independent

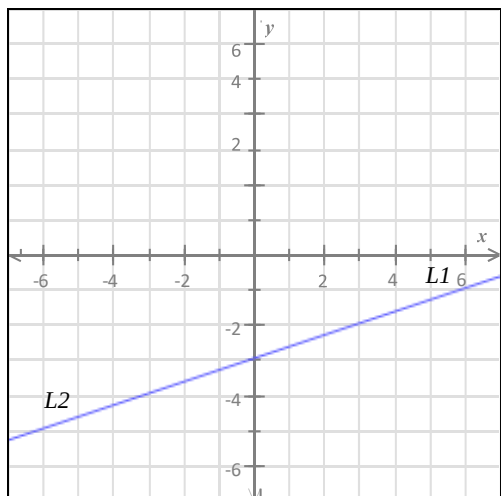
This means the system has:

- a unique solution:

Solution: (-2,-4)

L1: $y = x/3 - 3$

L2: $x + 3y = -9$



This system of equations is:

- consistent dependent
- This means the system has:
- infinitely many solutions

3.

$$y = 2x + 5$$

$$-5x + 4y = 14$$

$$y = 2x + 5$$

$$-5x + 4(2x + 5) = 14$$

$$-5x + 8x + 20 = 14$$

$$3x = 14 - 20$$

$$3x = -6$$

$$x = -2$$

$$y = (2 \times -2) + 5$$

$$y = -4 + 5$$

$$y = 1$$

$$x = -2$$

$$y = 1$$

3. Solve the following system of equations.

$$-2x + y = 11 \quad -$$

$$5x + y = -17$$

$$-7x = 28$$

$$x = -4$$

$$-2x + y = 11$$

$$(-2 \times -4) + y = 11$$

$$8 + y = 11$$

$$y = 11 - 8$$

$$y = 3$$

$$x = -4$$

$$y = 3$$

4. Solve the following system of equations.

$$9x + 8y = 13$$

$$3x + 4y = -1 \quad \times 3$$

$$9x + 8y = 13$$

$$9x + 12y = -3$$

$$-4y = 16$$

$$y = -4$$

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

$$3x + (4 \times -4) = -1$$

$$3x - 16 = -1$$

$$3x = -1 + 16$$

$$3x = 15$$

$$x = 3$$

$$x = 3$$

$$y = -4$$

5. Solve the following system of equations.

$$-0.7x + 0.3y = 0.2 \quad \times -10$$

$$0.08x + 0.15y = -0.76 \quad \times 100$$

$$7x - 3y = -2 \quad \times 5$$

$$8x + 15y = -76$$

$$35x - 15y = -10$$

$$8x + 15y = -76$$

$$43x = -86$$

$$x = -2$$

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

$$(7 \times -2) - 3y = -2$$

$$-14 - 3y = -2$$

$$-3y = -2 + 14$$

$$-3y = 12$$

$$y = -4$$

$$x = -2$$

$$y = -4$$

6. $x + y = 996$

$$x = 3y$$

$$x - 3y = 0 \quad -$$

$$x + y = 996$$

$$-4y = -996$$

$$y = 249$$

$$x = 3y$$

$$x = 3 \times 249$$

$$x = 747$$

$$\text{couch} = \$747$$

$$\text{coffee table} = \$249$$

$$7. \quad 2t + 12j = 45$$

$$5t + 3j = 18 \quad \times 4$$

$$2t + 12j = 45$$

$$20t + 12j = 72$$

$$-18t = -27$$

$$t = 1.5$$

$$2t + 12j = 45$$

$$(2 \times 1.5) + 12j = 45$$

$$3 + 12j = 45$$

$$12j = 45 - 3$$

$$12j = 42$$

$$j = 3.5$$

1 pound of trail mix = \$1.50

1 pound of jelly beans = \$3.50

8. Rate of boat in still water = $192 \div 4 = 48$ km/h

$$192 \div 3 = 64 \text{ km/h}$$

$$\text{Rate of boat in still water} = 64 - 48 = 16 \text{ km/h}$$

9. $x - y = 500$

$$6.5x + 5.5y = 48250$$

$$x - y = 500$$

$$65x + 55y = 482500$$

$$x - y = 500 \quad \times 11$$

$$13x + 11y = 96500$$

$$11x - 11y = 5500 \quad +$$

$$13x + 11y = 96500$$

$$24x = 102000$$

$$x = 4250$$

$$x - y = 500$$

$$4250 - y = 500$$

$$y = 4250 - 500$$

$$y = 3750$$

Hotel charge in the first city = \$3750

Hotel charge in the second city = \$4250

10. For each ordered pair (x, y) determine whether it is a solution to the inequality $7x - 4y \geq$

18.

(x, y)	Is it a solution?	
	Yes	No
$(-3, 2)$	☐	☒
$(-2, -8)$	☒	☐
$(-3, 0)$	☐	☒
$(8, 9)$	☒	☐

11.

