

Solving Review – Solve equations, literal equations, inequalities

Solve:

1.  $4x + 7 = -17$

2.  $3(2x - 6) = 12$

3.  $3x - 19 = 5x + 4$

4.  $\frac{2x-5}{3} = -8$

Solve for the variable.

5.  $A = \frac{1}{2}bh$ , for h

6.  $C = 2\pi r$ , for r

7.  $A = \frac{1}{2}h(b + c)$ , for h

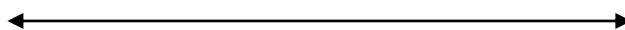
8.  $A = \frac{1}{2}h(b + c)$ , for b

Solve and graph each inequality.

9.  $x - 9 < 13$

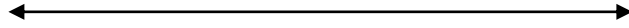


10.  $10 - x \leq 12$



Solve and graph each inequality.

11.  $6x - 8 > 10$



12.  $2(x - 6) \geq 3(x + 12)$



13.  $4 + 5(x - 6) < 2(4 - x)$



14. Explain when you switch the inequality sign when solving inequalities.

15. Oliver is raising money for his club. He has already raised \$40 by washing his neighbor's cars. He is now selling candy bars for \$1.50 each (they are big!). How many candy bars does Oliver need to sell, if he needs to raise at least \$150?

## Solving Systems

### Solve Systems of Equations

- Substitution
- Elimination
- Context with Graphing

### Write Systems of Equations

- From a graph
- Context

### Solve Systems of Inequalities

- Graphically
- Context with Graphing

### Write a System of Inequalities

Solve each system using substitution or elimination.

1. 
$$\begin{cases} y = 4x + 4 \\ 3x + 2y = 12 \end{cases}$$

2. 
$$\begin{cases} x + 3y = 9 \\ 2x - y = 4 \end{cases}$$

3. 
$$\begin{cases} 2x + y = 14 \\ 5x + 7y = -7 \end{cases}$$

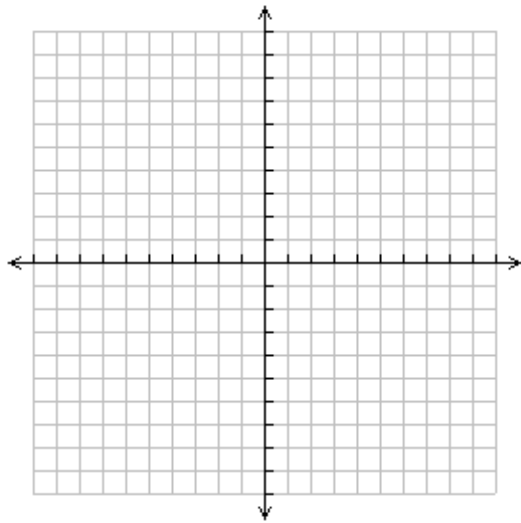
4. 
$$\begin{cases} 3y + x = 17 \\ x + y = 8 \end{cases}$$

$$5. \begin{cases} 3x + 2y = -5 \\ x - y = 10 \end{cases}$$

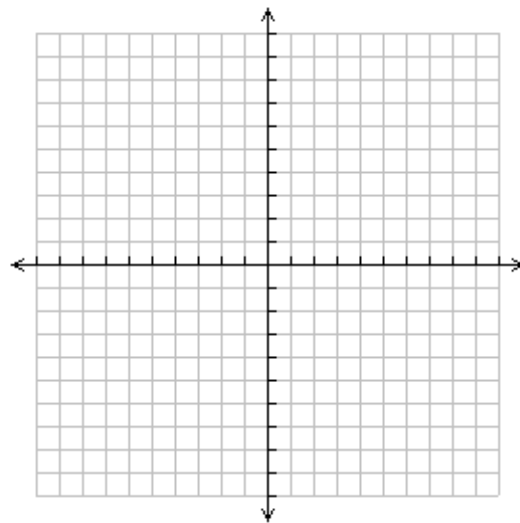
$$6. \begin{cases} 10x - 2y = 14 \\ 15x - 3y = 21 \end{cases}$$

Solve each system of inequalities.

$$7. \begin{cases} y < 2x + 2 \\ y \geq -x - 1 \end{cases}$$



$$8. \begin{cases} y \leq 3 \\ x > -1 \\ y > 3x - 3 \end{cases}$$



For each context problem:

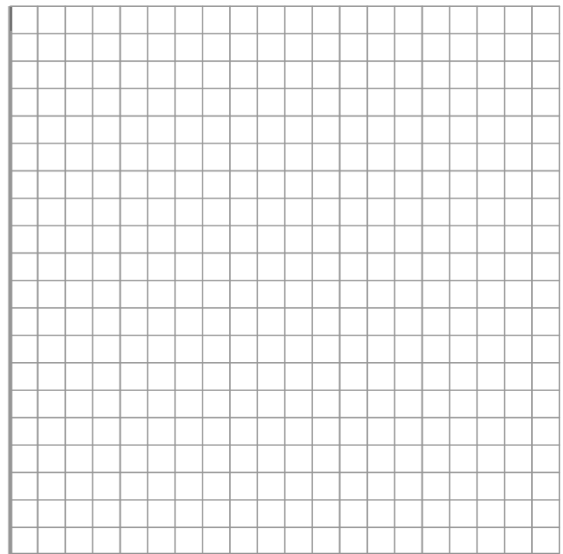
- a) Write a system of equations
- b) Solve the system by graphing
- c) Verify your solution by solving algebraically (substitution or elimination)
- d) Answer the questions about the situation

9. A taxi company charges \$2.80 to pick you up and \$1.60 for each mile. Another taxi company charges \$3.20 to pick you up and \$1.50 for each mile. After how many miles will the charges be equal?

a.

b.

c.



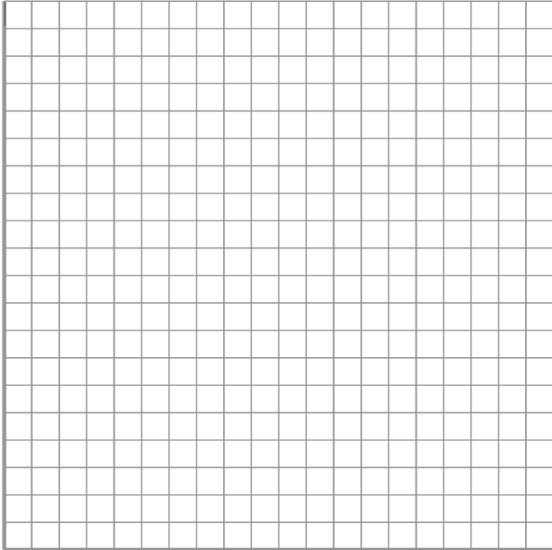
d.

10. Carrie and Dave each rent the same size moving truck for one day. They pay a fee of  $x$  dollars for the truck and  $y$  dollars per mile they drive. Carrie drives 150 miles and pays \$215. Dave drives 120 miles and pays \$176. Find the amount of the fee and the cost per mile.

a.

b.

c.



d.

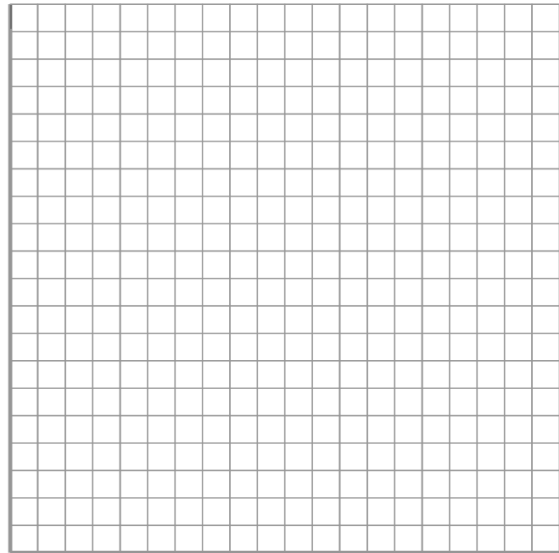
For each context problem:

- a) Write a system of inequalities
- b) Find the limits for each inequality
- c) Graph the system.
- d) Find 3 realistic solutions to the system

11. Ethan makes \$10 per hour mowing lawns and \$12 per hour raking leaves. He cannot work more than 15 hours per week. He wants to make at least \$120 per week.

a.

c.



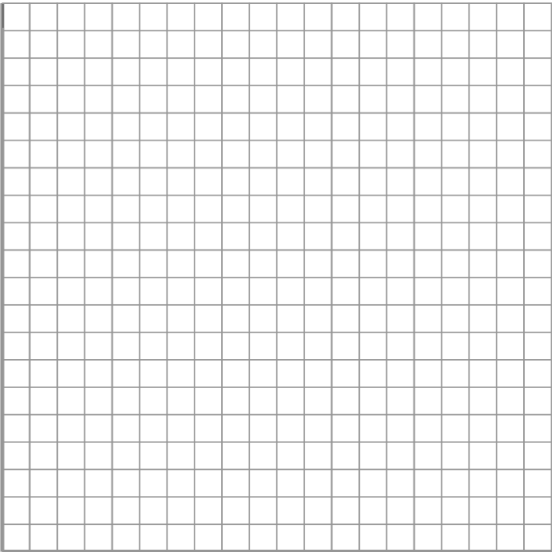
b.

d.

12. You are selling pizzas to raise money for a field trip. Cheese pizza cost \$7 and pepperoni pizza cost \$9. You must sell at least 2 of each kind of pizza, and you want to sell at least \$180 worth of pizza.

a.

c.



b.

d.