

For each of the following problems, describe briefly which method would be most appropriate and solve.

Sometimes you'll have infinite solutions:

$$13. \begin{cases} y = 17 - x \\ 3x + 3y = 51 \end{cases}$$

method: Substitution

$$3x + 3(17 - x) = 51$$

$$3x + 51 - 3x = 51$$

$$51 = 51 \checkmark$$

**infinite solutions**

Sometimes you'll have no solution:

$$14. \begin{cases} 3x + y = 4 \\ 3x + y = -1 \end{cases} \rightarrow \begin{array}{r} 3x + y = 4 \\ -3x - y = -1 \\ \hline 0 = 5 \end{array}$$

method: Elimination

$$0 \neq 5$$

**no solution**

Some solutions are decimal:

$$15. \begin{cases} 3x - 2y = 47.5 \\ 5x + 4y = 271.3 \end{cases}$$

method: Elimination

$$6x - 4y = 95$$

$$5x + 4y = 271.3$$

$$\frac{11x = 366.3}{11 \quad 11}$$

$$\boxed{x = 33.3}$$

$$3x - 2y = 47.5$$

$$3(33.3) - 2y = 47.5$$

$$\boxed{(33.3, 26.2)}$$

$$\begin{array}{r} 99.9 - 2y = 47.5 \\ -99.9 \quad -99.9 \\ \hline -2y = -52.4 \end{array}$$

$$\frac{-2y = -52.4}{-2 \quad -2}$$

$$\boxed{y = 26.2}$$

Some solutions are fractional:

$$16. \begin{cases} 4x + y = 7 \\ x = \frac{1}{2}y - 2 \end{cases}$$

method: substitution

$$4\left(\frac{1}{2}y - 2\right) + y = 7$$

$$2y - 8 + y = 7$$

$$3y - 8 = 7$$

$$\frac{3y = 15}{3 \quad 3}$$

$$\boxed{y = 5}$$

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

$$x = \frac{1}{2}(5) - 2$$

$$x = 2.5 - 2$$

$$\boxed{x = \frac{1}{2}}$$

$$\boxed{\left(\frac{1}{2}, 5\right)}$$

Name \_\_\_\_\_  
Math 8A

Date \_\_\_\_\_  
Urso/Mantay

25. Solve by graphing. Check your proposed answer with a table.

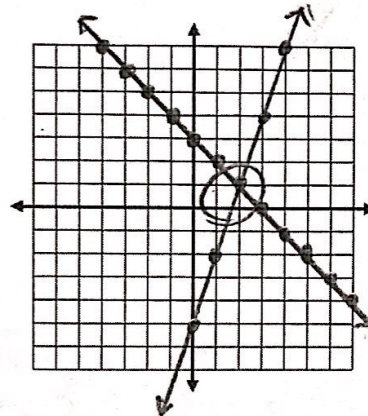
$$x + y = 3 \rightarrow y = -x + 3$$

$$-3x + y = -5$$

$$\begin{array}{r} +3x \\ \hline -3x + y = -5 \\ +3x \end{array}$$

$$y = 3x - 5$$

$(2, 1)$



$(2, 1)$