

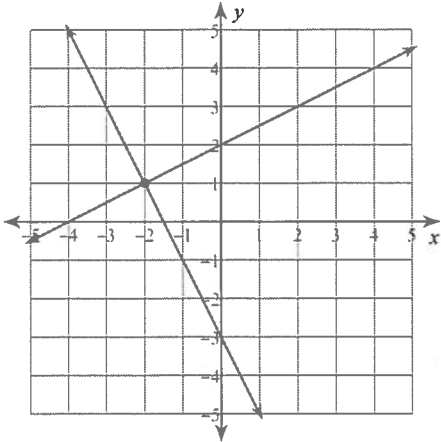
Assignment

Solve each system by graphing.

1) $y = \frac{1}{2}x + 2$ *m, b, answer*

$y = -2x - 3$

1/5



$(-2, 1)$

Solve each system.

3) $y = -3x + 11$
 $y = 4x - 3$

$(2, 5)$

1 $y_1 = y_2$
1 $4x - 3 = -3x + 11$
 $4x + 3x = 11 + 3$
 $7x = 14$
 $\frac{7x}{7} = \frac{14}{7}$
 $x = 2$

$y = 4x - 3$
 $y = 4(2) - 3$
 $y = 5$

1 $(2, 5)$

5) $4x - 2y = 2 \rightarrow 4x - 2y = 2$
 $(-2x + y = -1) \times 2 \rightarrow -4x + 2y = -2$

Infinite number of solutions

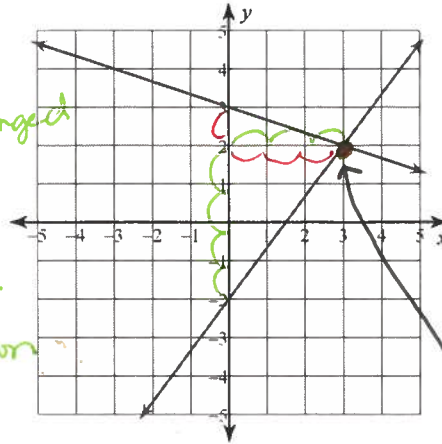
**Always true, so infinite solutions.*

(The lines are coincident)

2) $9 - x - 3y = 0$
 $3y = -6 + 4x$

1/5

*-rearranged
-line 1
-line 2
-solution*



$(3, 2)$

$9 - x - 3y = 0$
 $-3y = x - 9$
 $\frac{-3y}{-3} = \frac{x - 9}{-3}$

$y = \frac{x}{-3} + 3$

$y = -\frac{1}{3}x + 3$

$3y = -6 + 4x$
 $\frac{3y}{3} = \frac{-6 + 4x}{3}$

$y = \frac{4x}{3} - 2$

$(3, 2)$

4) $6x + 5y = -9$
 $y = 6x - 9$

$(1, -3)$

$6x + 5(6x - 9) = -9$
 $6x + 30x - 45 = -9$
 $36x = -9 + 45$
 $36x = 36$
 $\frac{36x}{36} = \frac{36}{36}$
 $x = 1$

$y = 6x - 9$
 $y = 6(1) - 9$
 $y = -3$

$(1, -3)$

6) $(3x + 4y = -17) \times 3 \rightarrow 9x + 12y = -51$
 $-9x + 8y = 11$

$(-3, -2)$

$20y = -40$
 $\frac{20y}{20} = \frac{-40}{20}$
 $y = -2$

$3x + 4y = -17$

$3x + 4(-2) = -17$
 $3x - 8 = -17 + 8$

$3x = -9$
 $\frac{3x}{3} = \frac{-9}{3}$

$x = -3$

$(-3, -2)$

$$7) \begin{cases} 2x + 9y = 13 \\ 9x + 18y = -9 \end{cases} \times 9 \rightarrow \begin{cases} 18x + 81y = 117 \\ -18x - 36y = 18 \end{cases}$$

$$\underline{\hspace{10em}}$$

$$45y = 135$$

$$\frac{45y}{45} = \frac{135}{45}$$

$$y = 3$$

$$2x + 9y = 13$$

$$2x + 9(3) = 13$$

$$2x + 27 = 13 \rightarrow -27$$

$$\frac{2x}{2} = \frac{-14}{2} \quad x = -7$$

$$8) \begin{cases} 16x + 2y = 6 \\ 8x + y = -2 \end{cases} \times 2 \rightarrow \begin{cases} 16x + 2y = 6 \\ -16x - 2y = -4 \end{cases}$$

$$\underline{\hspace{10em}}$$

$$0 = 2$$

No solution

impossible,
no solution

(The lines are parallel)

- 9) The senior classes at High School A and High School B planned separate trips to the local amusement park. The senior class at High School A rented and filled 2 vans and 4 buses with 168 students. High School B rented and filled 3 vans and 9 buses with 369 students. Each van and each bus carried the same number of students. How many students can a van carry? How many students can a bus carry?

Van: 6, Bus: 39

x: # of students per van
y: # of students per bus.

$$\text{Class A: } \begin{cases} 2x + 4y = 168 \\ 3x + 9y = 369 \end{cases} \times 3 \rightarrow \begin{cases} 6x + 12y = 504 \\ -6x - 18y = -738 \end{cases}$$

$$\underline{\hspace{10em}}$$

$$-6y = -234$$

$$\frac{-6y}{-6} = \frac{-234}{-6}$$

$$y = 39 \text{ students per bus}$$

$$x = 6 \text{ students per van}$$

6 students per van and 39 students per bus.

$$6x + 12y = 504$$

$$6x + 12(39) = 504$$

$$6x + 468 = 504 \rightarrow$$

$$\frac{6x}{6} = \frac{36}{6}$$

- 10) There are 18 animals in the barn. Some are chickens and some are horses. There are 64 legs in all. How many of each animal are there?

x: # of chickens

y: # of horses

$$\begin{cases} x + y = 18 \text{ animals} \\ 2x + 4y = 64 \text{ legs} \end{cases} \times 2 \rightarrow \begin{cases} -2x - 2y = -36 \\ 2x + 4y = 64 \end{cases}$$

$$\underline{\hspace{10em}}$$

$$2y = 28$$

$$\frac{2y}{2} = \frac{28}{2}$$

$$y = 14 \text{ horses}$$

$$x + y = 18$$

$$x + 14 = 18 \rightarrow$$

$$x = 4 \text{ chickens}$$

There are 4 chickens
and 14 horses