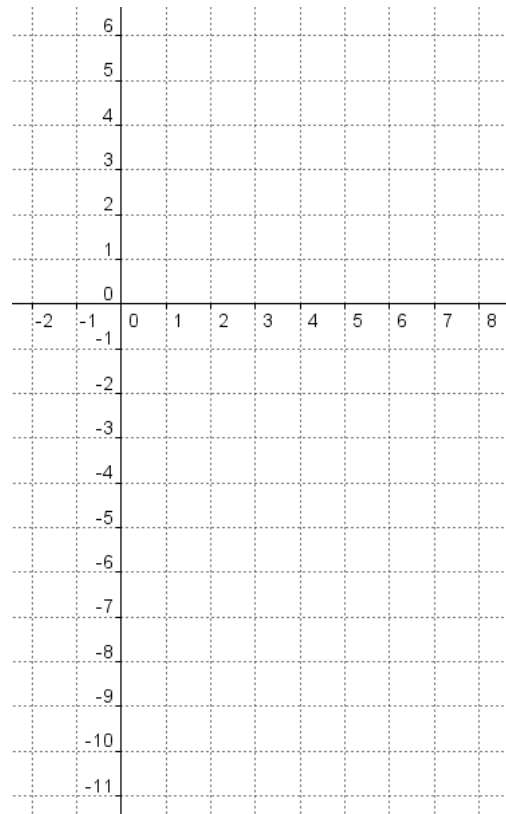
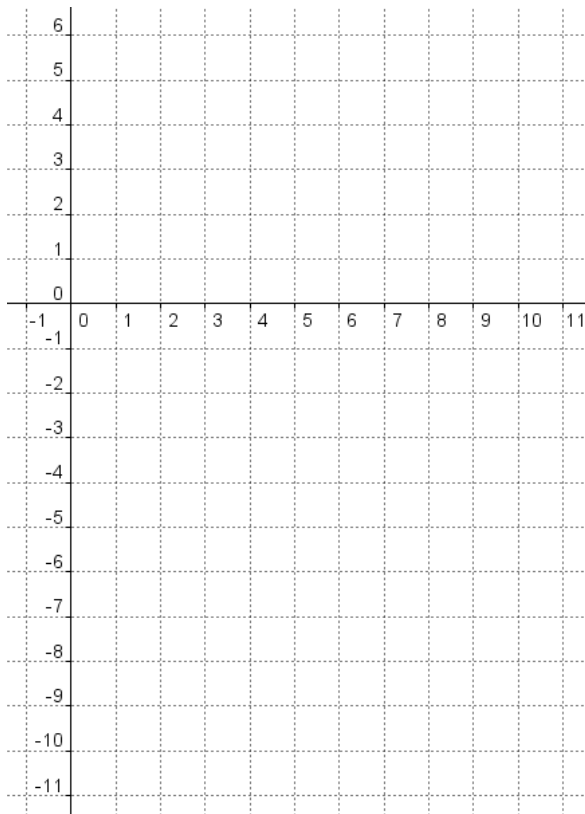


Solving Linear Systems – Practice Worksheet

1. Solve the following linear systems by graphing.

a. $y = -4x + 5$
 $y = x - 10$

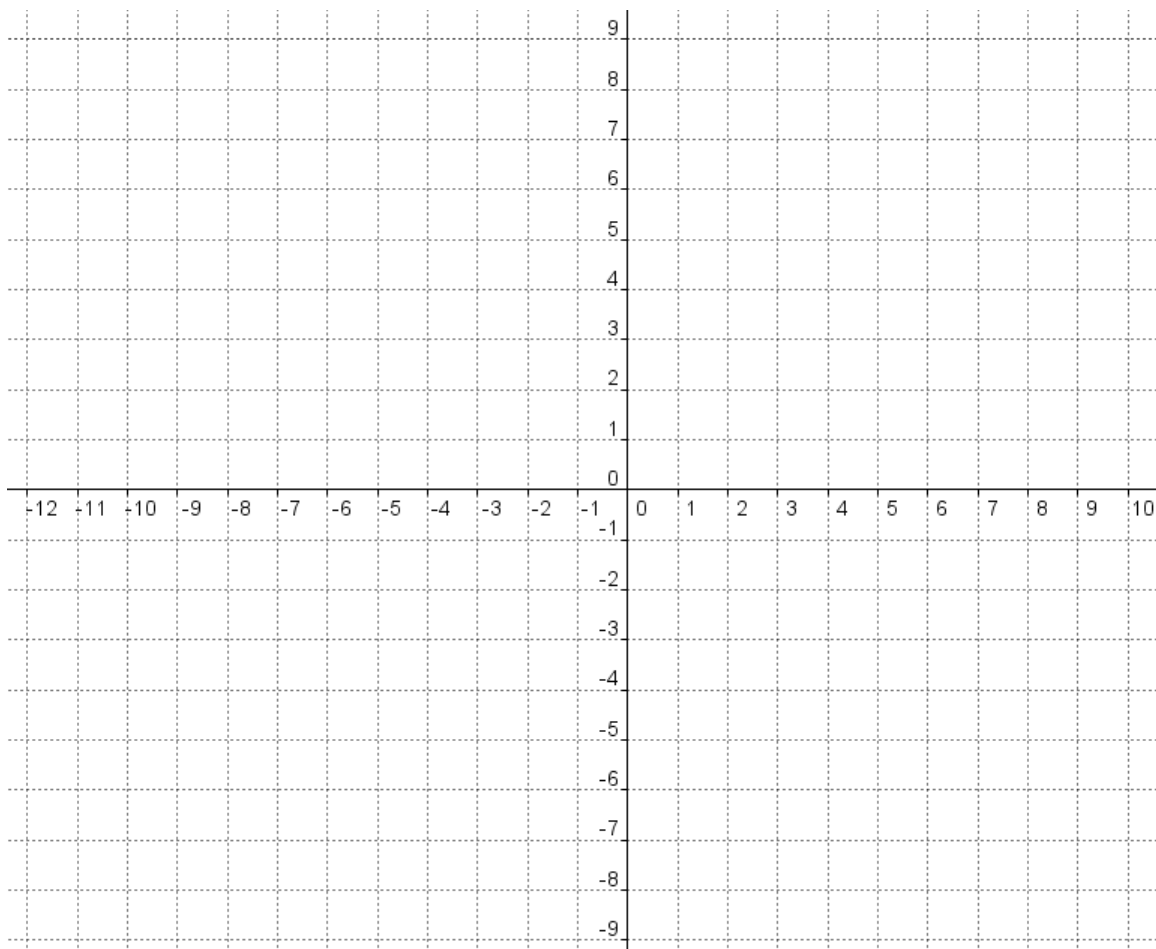
b. $x + 2y = 2$
 $-x + 4y = -20$



2. Solve the following linear system by graphing.

$$y = \frac{5}{3}x + 9$$

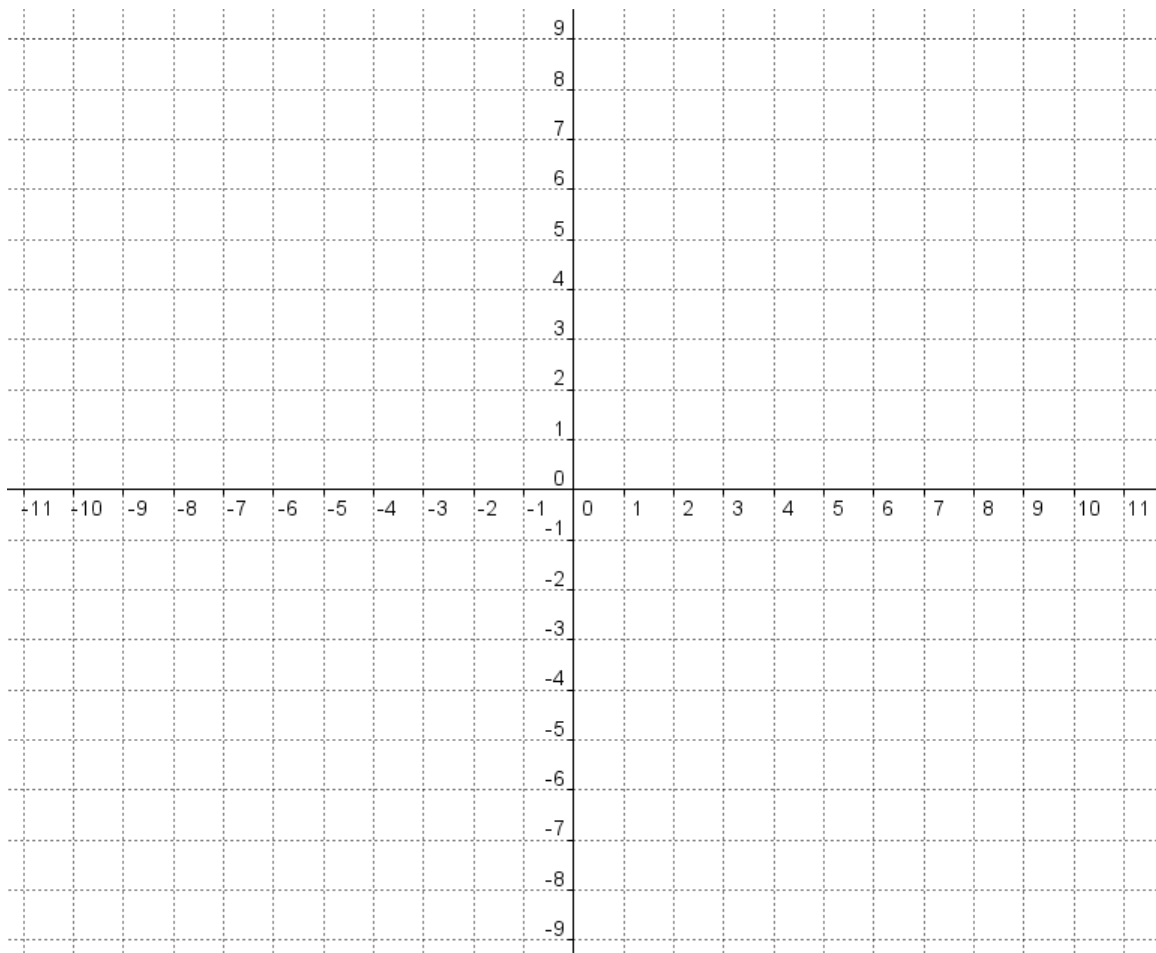
$$y = \frac{1}{3}x - 3$$



3. Solve the following linear system by graphing.

$$3x + 5y = -18$$

$$5x + 2y = 8$$



4. Solve the following linear systems algebraically (substitution or comparison or elimination).

a.
$$\begin{aligned} 2x - y &= 8 \\ x + y &= 4 \end{aligned}$$

b.
$$\begin{aligned} 2x + 3y &= 9 \\ 5x - 3y &= 5 \end{aligned}$$

c.
$$\begin{aligned} 2x - 5y &= 7 \\ 3x - 2y &= -17 \end{aligned}$$

d. $5a - b + 9 = 0$
 $4a + 3b + 11 = 0$

e. $2r + s = 11$
 $r - s = 2$

f. $y = 3 - x$
 $5x + 3y = -1$

g. $7a + 6b = -9$
 $15a - 6b = 42$

h. $y = 3x - 1$
 $y = 2x - 5$

i. $2y = 2x + 12$
 $y = -2x - 3$

j.
$$\begin{aligned} 2x - 3y &= 8 \\ 3x - 7y &= 7 \end{aligned}$$

k.
$$\begin{aligned} 4x + 3y &= 6 \\ -2x + 2y &= 15 \end{aligned}$$

l.
$$\begin{aligned} 4x &= 7y + 12 \\ 6x + 15 &= 5y \end{aligned}$$

5. Challenge problem: Determine the point(s) of intersection of the linear function $y = \frac{1}{2}x + 5$ and the quadratic function $y = -\frac{1}{2}x^2 + x + 11$.

Answers:

1. a) The solution is $(3, -7)$.

b) The solution is $(8, -3)$.

2. The solution is $(-9, -6)$.

3. The solution is $(4, -6)$.

4. a) $(4, 0)$ b) $\left(2, \frac{5}{3}\right)$ c) $(-9, -5)$ d) $(-2, -1)$

e) $\left(\frac{13}{3}, \frac{7}{3}\right)$ f) $(-5, 8)$ g) $\left(\frac{3}{2}, -\frac{13}{4}\right)$ h) $(-4, -13)$

i) $(-3, 3)$ j) $(7, 2)$ k) $\left(\frac{-33}{14}, \frac{36}{7}\right)$ l) $\left(-\frac{15}{2}, -6\right)$

5. The solutions are solutions are $(4, 7)$ and $(-3, 3.5)$.