

1. Determine whether the ordered pair  $(-2, 1)$  is a solution of the system  $\begin{cases} 3x - 5y = -11 \\ -4x + 2y = -6 \end{cases}$

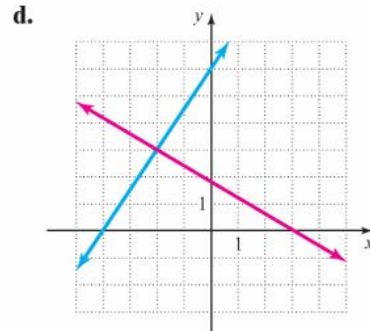
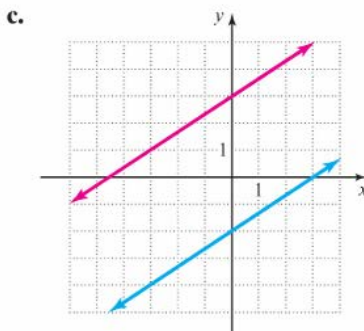
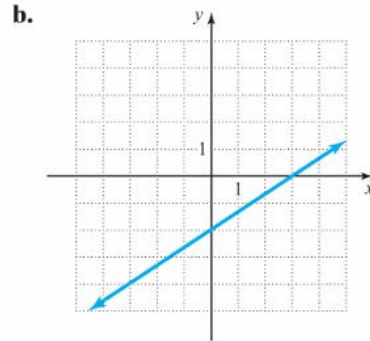
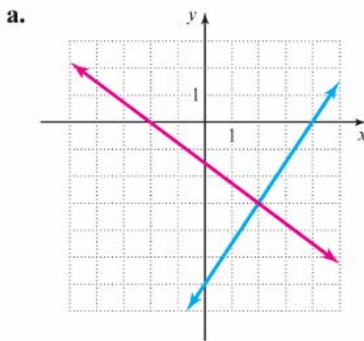
2. Match the system of equations to its graph. Classify the system as **consistent** or **inconsistent** and equations as **dependent** or **independent**.

a)  $\begin{cases} 3x + 5y = 9 \\ 3x - 2y = -12 \end{cases}$

b)  $\begin{cases} 3x + 4y = -6 \\ 3x - 2y = 12 \end{cases}$

c)  $\begin{cases} 2x - 3y = 6 \\ 4x - 6y = -18 \end{cases}$

d)  $\begin{cases} 2x - 3y = 6 \\ 4x - 6y = 12 \end{cases}$



3. Solve each system of equations **graphically**. Then classify the system as **consistent** or **inconsistent** and **dependent** or **independent**.

a)  $\begin{cases} y = 2x + 1 \\ x + y = -2 \end{cases}$

b)  $\begin{cases} f(x) = x - 1 \\ g(x) = -2x + 5 \end{cases}$

c)  $\begin{cases} 2x - 3y = 6 \\ y = \frac{2}{3}x - 2 \end{cases}$

d)  $\begin{cases} 2b + a = 11 \\ a - b = 5 \end{cases}$

e)  $\begin{cases} y = -\frac{1}{4}x \\ x + 4y = 8 \end{cases}$

f)  $\begin{cases} x = -3 \\ y = 2 \end{cases}$

4. Solve each system by **substitution**. State if the equations are **dependent** or the system is **inconsistent**.

a)  $\begin{cases} y = x + 4 \\ 3y - 5x = 6 \end{cases}$

b)  $\begin{cases} x - y = 5 \\ 2x = 2y + 14 \end{cases}$

## 4.1 In-class Practice

c) 
$$\begin{cases} 2x + y = 9 \\ 2x - 5y = 15 \end{cases}$$

d) 
$$\begin{cases} m - 2n = 3 \\ 4m + n = 1 \end{cases}$$

e) 
$$\begin{cases} 3p - 6q = 5 \\ 2q = 4p - 6 \end{cases}$$

f) 
$$\begin{cases} 3(y - 1) = 2(x - 3) \\ 3y - 2x = -3 \end{cases}$$

5. Solve each system of equations by the **elimination** method.

a) 
$$\begin{cases} x + y = 9 \\ 2x - y = -3 \end{cases}$$

b) 
$$\begin{cases} 2x - 3y = 18 \\ x + 3y = -6 \end{cases}$$

c) 
$$\begin{cases} 2a + 3b = 11 \\ 4a - 5b = -11 \end{cases}$$

d) 
$$\begin{cases} 3x - 5y = -2 \\ 5y - 3x = 7 \end{cases}$$

e) 
$$\begin{cases} 2x - 4y = 5 \\ 2x - 4y = 6 \end{cases}$$

f) 
$$\begin{cases} \frac{1}{5}x + \frac{1}{2}y = 6 \\ \frac{2}{5}x - \frac{3}{2}y = -8 \end{cases}$$

6.  $(1, 2)$  and  $(-3, 4)$  are two solutions of the equation  $y = mx + b$ . Find  $m$  and  $b$ .

7. The graph shows the cost of producing textbooks and the revenue from the sale of those textbooks.

a) What is the cost of producing 10,000 textbooks?

b) What is the revenue when 10,000 textbooks are sold?

c) For what number of textbooks is the cost equal to the revenue?

d) The cost of producing zero textbooks is called the fixed cost. Find the fixed cost.

