Gateway Exam #1 Practice Problems
Solving Systems of Equations

1. What values of x and y satisfy the following system of equations?

$$\begin{array}{rcrcr} x & + & y & = & 5 \\ x & - & y & = & -1 \end{array}$$

(a) $x = -2$, $y = -3$

(b) $x = -2$, $y = 3$

(c) $x = 2$, $y = -3$

(d) $x = 2$, $y = 3$

(e) The given system of equations has no solutions.

2. What values of x and y satisfy the following system of equations?

$$\begin{array}{rcrcr} x & - & 2y & = & -27 \\ -x & + & 3y & = & 37 \end{array}$$

(a) $x = 10$, $y = -7$

(b) $x = -7$, $y = 10$

(c) $x = 7$, $y = -10$

(d) $x = -10$, $y = 7$

(e) The given system of equations has no solutions.

3. What values of x and y satisfy the following system of equations?

$$\begin{array}{rcrcr} 2x & + & y & = & 6 \\ 3x & - & 2y & = & 23 \end{array}$$

(a) $x = 5$, $y = -4$

(b) $x = \frac{35}{2}$, $y = -29$

(c) $x = -35$, $y = 70$

(d) $x = \frac{29}{7}$, $y = -\frac{16}{7}$

(e) The given system of equations has no solutions.

4. What values of x and y satisfy the following system of equations?

$$\begin{array}{rcrcr} 10x & + & y & = & 10 \\ 20x & - & y & = & -10 \end{array}$$

(a) $x = 0$, $y = 0$

(b) $x = 10$, $y = 10$

(c) $x = 0$, $y = 10$

(d) $x = 10$, $y = 0$

(e) The given system of equations has no solutions.

5. What values of x and y satisfy the following system of equations?

$$
\begin{array}{rcrcr}
3x & - & 2y & = & 7 \\
-6x & + & 4y & = & 7
\end{array}
$$

(a) $x = 3$, $y = 1$

(b) $x = 3$, $y = \frac{25}{4}$

(c) $x = 1$, $y = 3$

(d) $x = \frac{25}{4}$, $y = 3$

(e) The given system of equations has no solutions.

6. What values of x and y satisfy the following system of equations?

$$
\begin{array}{rcrcr}
4x & + & 10y & = & -3 \\
-7x & + & y & = & -4
\end{array}
$$

(a) $x = \frac{1}{2}$, $y = -\frac{1}{2}$

(b) $x = \frac{1}{11}$, $y = -\frac{37}{11}$

(c) $x = \frac{1}{74}$, $y = -\frac{289}{74}$

(d) $x = 2$, $y = -\frac{11}{10}$

(e) The given system of equations has no solutions.

7. What values of x and y satisfy the following system of equations?

$$
\begin{array}{rcrcr}
x & + & y & = & 0 \\
2x & - & y & = & 0
\end{array}
$$

(a) $x = 1$, $y = -1$

(b) $x = 0$, $y = 0$

(c) $x = -1$, $y = 1$

(d) $x = 1$, $y = 2$

(e) The given system of equations has no solutions.

8. What values of x and y satisfy the following system of equations?

$$
\begin{array}{rcrcr}
10x & - & 10y & = & 5000 \\
-10x & + & 40y & = & -14000
\end{array}
$$

(a) $x = 800$, $y = -300$

(b) $x = 320$, $y = -180$

(c) $x = 200$, $y = -300$

(d) $x = -200$, $y = 300$

(e) The given system of equations has no solutions.

9. What values of x and y satisfy the following system of equations?

$$\begin{array}{rrrrr} 3x & - & 5y & = & 10 \\ -9x & + & 15y & = & 12 \end{array}$$

(a) $x = \frac{7}{3}$, $y = -\frac{3}{5}$

(b) $x = 0$, $y = 0$

(c) $x = -\frac{3}{5}$, $y = \frac{7}{3}$

(d) $x = 2$, $y = -\frac{4}{5}$

(e) The given system of equations has no solutions.

10. What values of x and y satisfy the following system of equations?

$$\begin{array}{rrrrr} x & - & 2y & = & 7 \\ 4x & + & 3y & = & 6 \end{array}$$

(a) $x = -\frac{9}{5}$, $y = -\frac{22}{5}$

(b) $x = 11$, $y = 2$

(c) $x = -\frac{33}{5}$, $y = -\frac{34}{5}$

(d) $x = 3$, $y = -2$

(e) The given system of equations has no solutions.

Answers:

1. d	2. b	3. a	4. c	5. e
6. a	7. b	8. c	9. e	10. d