

## Linear Systems (A)

Solve each system of equations.

$$\begin{aligned} 1. \quad & -3c - 4u + 4y = -25 \\ & -3c + 3u + 3y = 6 \\ & -4c - 3y = 13 \end{aligned}$$

$$\begin{aligned} 5. \quad & -u - x + 2z = -11 \\ & 3u - 2x + z = -18 \\ & -4u + 5x = 34 \end{aligned}$$

$$\begin{aligned} 2. \quad & 2a - 5u + 3y = -4 \\ & 6a + 5u - y = 8 \\ & -u - 4y = -28 \end{aligned}$$

$$\begin{aligned} 6. \quad & 3a - 5c + 5x = 43 \\ & c - 5x = -24 \\ & 3a + 4x = 19 \end{aligned}$$

$$\begin{aligned} 3. \quad & 6c + 4v - z = -31 \\ & c + v + 6z = 14 \\ & -v - 6z = -20 \end{aligned}$$

$$\begin{aligned} 7. \quad & 4c + u - 3x = 4 \\ & 5c + 6u + 6x = -58 \\ & 6c - 6u + x = 1 \end{aligned}$$

$$\begin{aligned} 4. \quad & -3v - 6y - z = -3 \\ & -5v + 6y + z = 43 \\ & 6y - z = 18 \end{aligned}$$

$$\begin{aligned} 8. \quad & 3c + 5v + 4z = 6 \\ & -2c - 5v - 4z = -5 \\ & -6c + 2v + 4z = 0 \end{aligned}$$

## Linear Systems (A) Answers

Solve each system of equations.

$$\begin{aligned} 1. \quad & -3c - 4u + 4y = -25 \\ & -3c + 3u + 3y = 6 \\ & -4c - 3y = 13 \\ & c = -1, u = 4, y = -3 \end{aligned}$$

$$\begin{aligned} 5. \quad & -u - x + 2z = -11 \\ & 3u - 2x + z = -18 \\ & -4u + 5x = 34 \\ & u = -1, x = 6, z = -3 \end{aligned}$$

$$\begin{aligned} 2. \quad & 2a - 5u + 3y = -4 \\ & 6a + 5u - y = 8 \\ & -u - 4y = -28 \\ & a = -1, u = 4, y = 6 \end{aligned}$$

$$\begin{aligned} 6. \quad & 3a - 5c + 5x = 43 \\ & c - 5x = -24 \\ & 3a + 4x = 19 \\ & a = 1, c = -4, x = 4 \end{aligned}$$

$$\begin{aligned} 3. \quad & 6c + 4v - z = -31 \\ & c + v + 6z = 14 \\ & -v - 6z = -20 \\ & c = -6, v = 2, z = 3 \end{aligned}$$

$$\begin{aligned} 7. \quad & 4c + u - 3x = 4 \\ & 5c + 6u + 6x = -58 \\ & 6c - 6u + x = 1 \\ & c = -2, u = -3, x = -5 \end{aligned}$$

$$\begin{aligned} 4. \quad & -3v - 6y - z = -3 \\ & -5v + 6y + z = 43 \\ & 6y - z = 18 \\ & v = -5, y = 3, z = 0 \end{aligned}$$

$$\begin{aligned} 8. \quad & 3c + 5v + 4z = 6 \\ & -2c - 5v - 4z = -5 \\ & -6c + 2v + 4z = 0 \\ & c = 1, v = -1, z = 2 \end{aligned}$$

## Linear Systems (B)

Solve each system of equations.

$$\begin{aligned} 1. \quad & 3u - 4v - 5z = -12 \\ & -5u - 2v + 5z = 22 \\ & -u - 5v + 3z = 13 \end{aligned}$$

$$\begin{aligned} 5. \quad & b + 5c - 2v = -4 \\ & -3b - 5c + 3v = -10 \\ & b + 4c - 6v = 24 \end{aligned}$$

$$\begin{aligned} 2. \quad & -3a - 6x - 6z = 6 \\ & -5a - 5x - 5z = 20 \\ & 3a + 5x - 4z = -17 \end{aligned}$$

$$\begin{aligned} 6. \quad & -a - 5b - v = -5 \\ & -3a + 6b + 5v = 38 \\ & a + b - v = -7 \end{aligned}$$

$$\begin{aligned} 3. \quad & a + 4u + 6y = -62 \\ & -5a - 2u + 2y = 28 \\ & -2u + 5y = -20 \end{aligned}$$

$$\begin{aligned} 7. \quad & 5a - 2v - 3z = -26 \\ & 4a - 5v + z = -48 \\ & 2a + 6v + 4z = 8 \end{aligned}$$

$$\begin{aligned} 4. \quad & b - 2u - 2z = 9 \\ & -3b + 3u - 3z = -9 \\ & 2b + 5u + 2z = 6 \end{aligned}$$

$$\begin{aligned} 8. \quad & 6u + 6v - 5y = -31 \\ & 6u - 6v - 5y = 5 \\ & -2u - 3v - y = 0 \end{aligned}$$

## Linear Systems (B) Answers

Solve each system of equations.

$$\begin{aligned} 1. \quad & 3u - 4v - 5z = -12 \\ & -5u - 2v + 5z = 22 \\ & -u - 5v + 3z = 13 \\ & u = -2, v = -1, z = 2 \end{aligned}$$

$$\begin{aligned} 5. \quad & b + 5c - 2v = -4 \\ & -3b - 5c + 3v = -10 \\ & b + 4c - 6v = 24 \\ & b = 4, c = -4, v = -6 \end{aligned}$$

$$\begin{aligned} 2. \quad & -3a - 6x - 6z = 6 \\ & -5a - 5x - 5z = 20 \\ & 3a + 5x - 4z = -17 \\ & a = -6, x = 1, z = 1 \end{aligned}$$

$$\begin{aligned} 6. \quad & -a - 5b - v = -5 \\ & -3a + 6b + 5v = 38 \\ & a + b - v = -7 \\ & a = -4, b = 1, v = 4 \end{aligned}$$

$$\begin{aligned} 3. \quad & a + 4u + 6y = -62 \\ & -5a - 2u + 2y = 28 \\ & -2u + 5y = -20 \\ & a = -6, u = -5, y = -6 \end{aligned}$$

$$\begin{aligned} 7. \quad & 5a - 2v - 3z = -26 \\ & 4a - 5v + z = -48 \\ & 2a + 6v + 4z = 8 \\ & a = -5, v = 5, z = -3 \end{aligned}$$

$$\begin{aligned} 4. \quad & b - 2u - 2z = 9 \\ & -3b + 3u - 3z = -9 \\ & 2b + 5u + 2z = 6 \\ & b = 5, u = 0, z = -2 \end{aligned}$$

$$\begin{aligned} 8. \quad & 6u + 6v - 5y = -31 \\ & 6u - 6v - 5y = 5 \\ & -2u - 3v - y = 0 \\ & u = 2, v = -3, y = 5 \end{aligned}$$

## Linear Systems (C)

Solve each system of equations.

$$\begin{aligned} 1. \quad & -4c + 5x - 2y = 11 \\ & -6c - 2x - 2y = -36 \\ & 2c + x + y = 12 \end{aligned}$$

$$\begin{aligned} 5. \quad & 5b - u + z = 40 \\ & 4b - 5u - 5z = 34 \\ & -4b - 2u - 4z = -28 \end{aligned}$$

$$\begin{aligned} 2. \quad & 3c + u + 2v = 14 \\ & -4c - 3u - 2v = -13 \\ & -c + u = -8 \end{aligned}$$

$$\begin{aligned} 6. \quad & b - 5u + 3z = -17 \\ & b - z = 0 \\ & 4b + u = -11 \end{aligned}$$

$$\begin{aligned} 3. \quad & -4a - 6b + 6x = 12 \\ & -2a - 3b + 6x = 9 \\ & 6a - 2x = -2 \end{aligned}$$

$$\begin{aligned} 7. \quad & u + 4x - 6z = 28 \\ & -2u - 6x + 3z = -35 \\ & 2u + 4x + 4z = 16 \end{aligned}$$

$$\begin{aligned} 4. \quad & -6u + 4y + 4z = -26 \\ & -5u + 4y - 4z = -55 \\ & -u - z = -7 \end{aligned}$$

$$\begin{aligned} 8. \quad & 6c - 4v - z = -7 \\ & 2c - 2v + z = 5 \\ & c + 2v - z = -8 \end{aligned}$$

## Linear Systems (C) Answers

Solve each system of equations.

$$\begin{aligned} 1. \quad & -4c + 5x - 2y = 11 \\ & -6c - 2x - 2y = -36 \\ & 2c + x + y = 12 \\ & c = 6, x = 5, y = -5 \end{aligned}$$

$$\begin{aligned} 5. \quad & 5b - u + z = 40 \\ & 4b - 5u - 5z = 34 \\ & -4b - 2u - 4z = -28 \\ & b = 6, u = -6, z = 4 \end{aligned}$$

$$\begin{aligned} 2. \quad & 3c + u + 2v = 14 \\ & -4c - 3u - 2v = -13 \\ & -c + u = -8 \\ & c = 5, u = -3, v = 1 \end{aligned}$$

$$\begin{aligned} 6. \quad & b - 5u + 3z = -17 \\ & b - z = 0 \\ & 4b + u = -11 \\ & b = -3, u = 1, z = -3 \end{aligned}$$

$$\begin{aligned} 3. \quad & -4a - 6b + 6x = 12 \\ & -2a - 3b + 6x = 9 \\ & 6a - 2x = -2 \\ & a = 0, b = -1, x = 1 \end{aligned}$$

$$\begin{aligned} 7. \quad & u + 4x - 6z = 28 \\ & -2u - 6x + 3z = -35 \\ & 2u + 4x + 4z = 16 \\ & u = -2, x = 6, z = -1 \end{aligned}$$

$$\begin{aligned} 4. \quad & -6u + 4y + 4z = -26 \\ & -5u + 4y - 4z = -55 \\ & -u - z = -7 \\ & u = 3, y = -6, z = 4 \end{aligned}$$

$$\begin{aligned} 8. \quad & 6c - 4v - z = -7 \\ & 2c - 2v + z = 5 \\ & c + 2v - z = -8 \\ & c = -1, v = -1, z = 5 \end{aligned}$$

## Linear Systems (D)

Solve each system of equations.

$$\begin{aligned} 1. \quad & c - 2x + 6z = 9 \\ & -c + 6x + 4z = -3 \\ & -6c - 6x + z = 1 \end{aligned}$$

$$\begin{aligned} 5. \quad & 4b + 3y - 2z = -4 \\ & 6b + 4y + 4z = -48 \\ & -2b - 6z = 44 \end{aligned}$$

$$\begin{aligned} 2. \quad & -6a + 3c + x = 55 \\ & -a - 5c + 6x = 5 \\ & -3a + 4c + x = 42 \end{aligned}$$

$$\begin{aligned} 6. \quad & 6u - 5v + 3x = -3 \\ & 2u - 5v - 4x = -6 \\ & 2v + 5x = -3 \end{aligned}$$

$$\begin{aligned} 3. \quad & b - 3u - 4v = -25 \\ & 5b - 6u - v = -23 \\ & 6b + 5u - 6v = 19 \end{aligned}$$

$$\begin{aligned} 7. \quad & -b + 4x = 18 \\ & 5b + x = -6 \\ & b - z = 3 \end{aligned}$$

$$\begin{aligned} 4. \quad & -3a - 6b + 5z = 37 \\ & -6a - b - 3z = -35 \\ & 2a + 4b + z = -3 \end{aligned}$$

$$\begin{aligned} 8. \quad & -6a - 4b - 2v = 14 \\ & -a + 5b + 5v = 46 \\ & -2b - 3v = -21 \end{aligned}$$

## Linear Systems (D) Answers

Solve each system of equations.

$$\begin{aligned} 1. \quad & c - 2x + 6z = 9 \\ & -c + 6x + 4z = -3 \\ & -6c - 6x + z = 1 \\ & c = 1, x = -1, z = 1 \end{aligned}$$

$$\begin{aligned} 5. \quad & 4b + 3y - 2z = -4 \\ & 6b + 4y + 4z = -48 \\ & -2b - 6z = 44 \\ & b = -4, y = 0, z = -6 \end{aligned}$$

$$\begin{aligned} 2. \quad & -6a + 3c + x = 55 \\ & -a - 5c + 6x = 5 \\ & -3a + 4c + x = 42 \\ & a = -6, c = 5, x = 4 \end{aligned}$$

$$\begin{aligned} 6. \quad & 6u - 5v + 3x = -3 \\ & 2u - 5v - 4x = -6 \\ & 2v + 5x = -3 \\ & u = 6, v = 6, x = -3 \end{aligned}$$

$$\begin{aligned} 3. \quad & b - 3u - 4v = -25 \\ & 5b - 6u - v = -23 \\ & 6b + 5u - 6v = 19 \\ & b = 2, u = 5, v = 3 \end{aligned}$$

$$\begin{aligned} 7. \quad & -b + 4x = 18 \\ & 5b + x = -6 \\ & b - z = 3 \\ & b = -2, x = 4, z = -5 \end{aligned}$$

$$\begin{aligned} 4. \quad & -3a - 6b + 5z = 37 \\ & -6a - b - 3z = -35 \\ & 2a + 4b + z = -3 \\ & a = 4, b = -4, z = 5 \end{aligned}$$

$$\begin{aligned} 8. \quad & -6a - 4b - 2v = 14 \\ & -a + 5b + 5v = 46 \\ & -2b - 3v = -21 \\ & a = -6, b = 3, v = 5 \end{aligned}$$

## Linear Systems (E)

Solve each system of equations.

$$\begin{aligned} 1. \quad & 3b - 2y - 6z = 6 \\ & 2b + y - 6z = -12 \\ & -6b - 5y + 3z = 33 \end{aligned}$$

$$\begin{aligned} 5. \quad & -b - 2c + 4y = 34 \\ & -6b - c - 5y = -14 \\ & 5b - 6c - 3y = -4 \end{aligned}$$

$$\begin{aligned} 2. \quad & 4b + 4v - 6y = -20 \\ & -4b - 4v + y = 0 \\ & -3v - y = -13 \end{aligned}$$

$$\begin{aligned} 6. \quad & -4c + y + z = -21 \\ & c + 5y - z = 30 \\ & c + 4z = -15 \end{aligned}$$

$$\begin{aligned} 3. \quad & -4a - 3c + y = -20 \\ & a - 4c - 4y = -13 \\ & -3a + c + y = -5 \end{aligned}$$

$$\begin{aligned} 7. \quad & 6c - 3v - y = -3 \\ & -5c + 6v + y = 19 \\ & 5c + 2v + 6y = -21 \end{aligned}$$

$$\begin{aligned} 4. \quad & -6a + u - 5x = 2 \\ & -6a + u - 4x = 8 \\ & 4u - x = -22 \end{aligned}$$

$$\begin{aligned} 8. \quad & 2c - 2y - 6z = -44 \\ & 6y + 6z = 36 \\ & -5c - y = 20 \end{aligned}$$

## Linear Systems (E) Answers

Solve each system of equations.

1.  $3b - 2y - 6z = 6$   
 $2b + y - 6z = -12$   
 $-6b - 5y + 3z = 33$   
 $b = 0, y = -6, z = 1$

5.  $-b - 2c + 4y = 34$   
 $-6b - c - 5y = -14$   
 $5b - 6c - 3y = -4$   
 $b = -2, c = -4, y = 6$

2.  $4b + 4v - 6y = -20$   
 $-4b - 4v + y = 0$   
 $-3v - y = -13$   
 $b = -2, v = 3, y = 4$

6.  $-4c + y + z = -21$   
 $c + 5y - z = 30$   
 $c + 4z = -15$   
 $c = 5, y = 4, z = -5$

3.  $-4a - 3c + y = -20$   
 $a - 4c - 4y = -13$   
 $-3a + c + y = -5$   
 $a = 3, c = 3, y = 1$

7.  $6c - 3v - y = -3$   
 $-5c + 6v + y = 19$   
 $5c + 2v + 6y = -21$   
 $c = 1, v = 5, y = -6$

4.  $-6a + u - 5x = 2$   
 $-6a + u - 4x = 8$   
 $4u - x = -22$   
 $a = -6, u = -4, x = 6$

8.  $2c - 2y - 6z = -44$   
 $6y + 6z = 36$   
 $-5c - y = 20$   
 $c = -4, y = 0, z = 6$

## Linear Systems (F)

Solve each system of equations.

$$\begin{aligned} 1. \quad & -a - 5b - v = 40 \\ & 2a - 4b - 5v = 39 \\ & 5a + 3b + 2v = -53 \end{aligned}$$

$$\begin{aligned} 5. \quad & 5u + 3y - 4z = -15 \\ & -u - 2y + z = 0 \\ & 5u + 2y - 5z = -16 \end{aligned}$$

$$\begin{aligned} 2. \quad & -4a + 5u - 3z = -2 \\ & a + u + 5z = -12 \\ & -5a + 6u + 2z = -26 \end{aligned}$$

$$\begin{aligned} 6. \quad & 3c - 6v + 6y = 51 \\ & 6c - 5v - y = 48 \\ & 6c + 5v - 4y = 2 \end{aligned}$$

$$\begin{aligned} 3. \quad & 6c - 2v - z = -34 \\ & 5c - 5v + 6z = -35 \\ & 5c - 2v + 6z = -29 \end{aligned}$$

$$\begin{aligned} 7. \quad & -2b + 3v + 4y = -29 \\ & -4b + v - 2y = -13 \\ & 6b - 4v - 3y = 44 \end{aligned}$$

$$\begin{aligned} 4. \quad & -a + 2v - x = 3 \\ & 6a - 6v - 3x = -33 \\ & -6a - 4v + 6x = -2 \end{aligned}$$

$$\begin{aligned} 8. \quad & -5v - 5y - 5z = 20 \\ & -4v - 2y + 4z = -12 \\ & 6v - 2y = -16 \end{aligned}$$

## Linear Systems (F) Answers

Solve each system of equations.

1.  $-a - 5b - v = 40$   
 $2a - 4b - 5v = 39$   
 $5a + 3b + 2v = -53$   
 $a = -5, b = -6, v = -5$

5.  $5u + 3y - 4z = -15$   
 $-u - 2y + z = 0$   
 $5u + 2y - 5z = -16$   
 $u = -5, y = 2, z = -1$

2.  $-4a + 5u - 3z = -2$   
 $a + u + 5z = -12$   
 $-5a + 6u + 2z = -26$   
 $a = 6, u = 2, z = -4$

6.  $3c - 6v + 6y = 51$   
 $6c - 5v - y = 48$   
 $6c + 5v - 4y = 2$   
 $c = 5, v = -4, y = 2$

3.  $6c - 2v - z = -34$   
 $5c - 5v + 6z = -35$   
 $5c - 2v + 6z = -29$   
 $c = -5, v = 2, z = 0$

7.  $-2b + 3v + 4y = -29$   
 $-4b + v - 2y = -13$   
 $6b - 4v - 3y = 44$   
 $b = 3, v = -5, y = -2$

4.  $-a + 2v - x = 3$   
 $6a - 6v - 3x = -33$   
 $-6a - 4v + 6x = -2$   
 $a = 2, v = 5, x = 5$

8.  $-5v - 5y - 5z = 20$   
 $-4v - 2y + 4z = -12$   
 $6v - 2y = -16$   
 $v = -2, y = 2, z = -4$

## Linear Systems (G)

Solve each system of equations.

$$\begin{aligned} 1. \quad & -3u - 4x + 4y = 5 \\ & u - 5x - 4y = 29 \\ & -4u - 2x = 4 \end{aligned}$$

$$\begin{aligned} 5. \quad & 6v + 2x - 4y = -46 \\ & -2v - x + 6y = 44 \\ & 4v - x + 5y = 20 \end{aligned}$$

$$\begin{aligned} 2. \quad & -4c - 6u - y = 20 \\ & 2c - u - 3y = 9 \\ & -6c + 5u - y = -13 \end{aligned}$$

$$\begin{aligned} 6. \quad & 6a - 3b + 6z = 6 \\ & -4a + 4b + 6z = 14 \\ & a - 5b - 4z = -22 \end{aligned}$$

$$\begin{aligned} 3. \quad & 4b - 5c + 5z = -1 \\ & -5b + 5c - 2z = 6 \\ & -b - 6c - 4z = -27 \end{aligned}$$

$$\begin{aligned} 7. \quad & 6a - 6b - 5x = -43 \\ & -3a - 3b - x = -26 \\ & -a + x = 3 \end{aligned}$$

$$\begin{aligned} 4. \quad & -6x - 3y + 6z = -15 \\ & 3x - y + z = 11 \\ & -x + 2y + 4z = 22 \end{aligned}$$

$$\begin{aligned} 8. \quad & 5c - 3x - 6y = 5 \\ & -c - 6x - 4y = 8 \\ & 3c + 3x - y = 0 \end{aligned}$$

## Linear Systems (G) Answers

Solve each system of equations.

$$\begin{aligned} 1. \quad & -3u - 4x + 4y = 5 \\ & u - 5x - 4y = 29 \\ & -4u - 2x = 4 \\ & u = 1, x = -4, y = -2 \end{aligned}$$

$$\begin{aligned} 5. \quad & 6v + 2x - 4y = -46 \\ & -2v - x + 6y = 44 \\ & 4v - x + 5y = 20 \\ & v = -3, x = -2, y = 6 \end{aligned}$$

$$\begin{aligned} 2. \quad & -4c - 6u - y = 20 \\ & 2c - u - 3y = 9 \\ & -6c + 5u - y = -13 \\ & c = 0, u = -3, y = -2 \end{aligned}$$

$$\begin{aligned} 6. \quad & 6a - 3b + 6z = 6 \\ & -4a + 4b + 6z = 14 \\ & a - 5b - 4z = -22 \\ & a = 2, b = 4, z = 1 \end{aligned}$$

$$\begin{aligned} 3. \quad & 4b - 5c + 5z = -1 \\ & -5b + 5c - 2z = 6 \\ & -b - 6c - 4z = -27 \\ & b = 1, c = 3, z = 2 \end{aligned}$$

$$\begin{aligned} 7. \quad & 6a - 6b - 5x = -43 \\ & -3a - 3b - x = -26 \\ & -a + x = 3 \\ & a = 2, b = 5, x = 5 \end{aligned}$$

$$\begin{aligned} 4. \quad & -6x - 3y + 6z = -15 \\ & 3x - y + z = 11 \\ & -x + 2y + 4z = 22 \\ & x = 4, y = 5, z = 4 \end{aligned}$$

$$\begin{aligned} 8. \quad & 5c - 3x - 6y = 5 \\ & -c - 6x - 4y = 8 \\ & 3c + 3x - y = 0 \\ & c = -2, x = 1, y = -3 \end{aligned}$$

## Linear Systems (H)

Solve each system of equations.

$$\begin{aligned} 1. \quad & 3c + 2x + 5z = 6 \\ & 5c + 2x + 2z = 5 \\ & -3c + 4x - 6z = -13 \end{aligned}$$

$$\begin{aligned} 5. \quad & -4a + x + 3y = -5 \\ & -5a - x - y = -34 \\ & 6a + 5x - 3y = 51 \end{aligned}$$

$$\begin{aligned} 2. \quad & 2v + 5x + 6z = -26 \\ & 4v - 2x + 5z = -34 \\ & -4v - 4x - z = -2 \end{aligned}$$

$$\begin{aligned} 6. \quad & 3u - 4x + 2z = 7 \\ & -3u + 6x - 2z = -11 \\ & 2x - 5z = 21 \end{aligned}$$

$$\begin{aligned} 3. \quad & -3c + 2v + 2x = -8 \\ & -c - 3v - 3x = -10 \\ & -3c + 4v + 2x = 2 \end{aligned}$$

$$\begin{aligned} 7. \quad & -4c - u - 6y = 51 \\ & -c + 4u + y = -15 \\ & 4c + 4u + 2y = -36 \end{aligned}$$

$$\begin{aligned} 4. \quad & -a + 2u + 3y = -4 \\ & 3a + 3u - 6y = -30 \\ & -6a + u = 13 \end{aligned}$$

$$\begin{aligned} 8. \quad & -2b + 4x - 2y = 32 \\ & 2b + 2x + 3y = -5 \\ & 4b - 5y = 3 \end{aligned}$$

## Linear Systems (H) Answers

Solve each system of equations.

$$\begin{aligned} 1. \quad & 3c + 2x + 5z = 6 \\ & 5c + 2x + 2z = 5 \\ & -3c + 4x - 6z = -13 \\ & c = 1, x = -1, z = 1 \end{aligned}$$

$$\begin{aligned} 5. \quad & -4a + x + 3y = -5 \\ & -5a - x - y = -34 \\ & 6a + 5x - 3y = 51 \\ & a = 5, x = 6, y = 3 \end{aligned}$$

$$\begin{aligned} 2. \quad & 2v + 5x + 6z = -26 \\ & 4v - 2x + 5z = -34 \\ & -4v - 4x - z = -2 \\ & v = 0, x = 2, z = -6 \end{aligned}$$

$$\begin{aligned} 6. \quad & 3u - 4x + 2z = 7 \\ & -3u + 6x - 2z = -11 \\ & 2x - 5z = 21 \\ & u = 3, x = -2, z = -5 \end{aligned}$$

$$\begin{aligned} 3. \quad & -3c + 2v + 2x = -8 \\ & -c - 3v - 3x = -10 \\ & -3c + 4v + 2x = 2 \\ & c = 4, v = 5, x = -3 \end{aligned}$$

$$\begin{aligned} 7. \quad & -4c - u - 6y = 51 \\ & -c + 4u + y = -15 \\ & 4c + 4u + 2y = -36 \\ & c = -3, u = -3, y = -6 \end{aligned}$$

$$\begin{aligned} 4. \quad & -a + 2u + 3y = -4 \\ & 3a + 3u - 6y = -30 \\ & -6a + u = 13 \\ & a = -3, u = -5, y = 1 \end{aligned}$$

$$\begin{aligned} 8. \quad & -2b + 4x - 2y = 32 \\ & 2b + 2x + 3y = -5 \\ & 4b - 5y = 3 \\ & b = -3, x = 5, y = -3 \end{aligned}$$

## Linear Systems (I)

Solve each system of equations.

$$\begin{aligned} 1. \quad & -2a - 3b - z = -11 \\ & 3a - 4b + 6z = -39 \\ & 6a + 4b - 3z = 9 \end{aligned}$$

$$\begin{aligned} 5. \quad & 2a - 6c - 2x = -20 \\ & a - 2c + 5x = -40 \\ & -6a - 3c - 2x = -18 \end{aligned}$$

$$\begin{aligned} 2. \quad & 3b - 6u - v = -37 \\ & -4b + 6u + v = 38 \\ & -2b + 4u - 6v = -2 \end{aligned}$$

$$\begin{aligned} 6. \quad & a + 5b + z = 10 \\ & 6a + z = -25 \\ & -a + 4z = 25 \end{aligned}$$

$$\begin{aligned} 3. \quad & 6b + u + x = 30 \\ & -2b + 2u - 2x = 0 \\ & 2b - 5u + 4x = -13 \end{aligned}$$

$$\begin{aligned} 7. \quad & -2c - v + 6y = 20 \\ & c + 4v - 6y = -8 \\ & -2c + 2v + 4y = 24 \end{aligned}$$

$$\begin{aligned} 4. \quad & 5a - u + 2x = -1 \\ & -5a - 5x = 5 \\ & -5a - 4u = 21 \end{aligned}$$

$$\begin{aligned} 8. \quad & -3a + 3b + 5c = -9 \\ & 6a - 2b + 4c = 26 \\ & 5a + 2b - 4c = 29 \end{aligned}$$

## Linear Systems (I) Answers

Solve each system of equations.

$$\begin{aligned} 1. \quad & -2a - 3b - z = -11 \\ & 3a - 4b + 6z = -39 \\ & 6a + 4b - 3z = 9 \\ & a = -3, b = 6, z = -1 \end{aligned}$$

$$\begin{aligned} 5. \quad & 2a - 6c - 2x = -20 \\ & a - 2c + 5x = -40 \\ & -6a - 3c - 2x = -18 \\ & a = 2, c = 6, x = -6 \end{aligned}$$

$$\begin{aligned} 2. \quad & 3b - 6u - v = -37 \\ & -4b + 6u + v = 38 \\ & -2b + 4u - 6v = -2 \\ & b = -1, u = 5, v = 4 \end{aligned}$$

$$\begin{aligned} 6. \quad & a + 5b + z = 10 \\ & 6a + z = -25 \\ & -a + 4z = 25 \\ & a = -5, b = 2, z = 5 \end{aligned}$$

$$\begin{aligned} 3. \quad & 6b + u + x = 30 \\ & -2b + 2u - 2x = 0 \\ & 2b - 5u + 4x = -13 \\ & b = 4, u = 5, x = 1 \end{aligned}$$

$$\begin{aligned} 7. \quad & -2c - v + 6y = 20 \\ & c + 4v - 6y = -8 \\ & -2c + 2v + 4y = 24 \\ & c = 0, v = 4, y = 4 \end{aligned}$$

$$\begin{aligned} 4. \quad & 5a - u + 2x = -1 \\ & -5a - 5x = 5 \\ & -5a - 4u = 21 \\ & a = -1, u = -4, x = 0 \end{aligned}$$

$$\begin{aligned} 8. \quad & -3a + 3b + 5c = -9 \\ & 6a - 2b + 4c = 26 \\ & 5a + 2b - 4c = 29 \\ & a = 5, b = 2, c = 0 \end{aligned}$$

## Linear Systems (J)

Solve each system of equations.

$$\begin{aligned} 1. \quad & -3a - 5v - x = 16 \\ & 6a + 3v - 2x = -10 \\ & -4a + 5v - 6x = -72 \end{aligned}$$

$$\begin{aligned} 5. \quad & -6a - 5u + 6x = -2 \\ & 3a + 2u - 5x = 8 \\ & 6u + x = -15 \end{aligned}$$

$$\begin{aligned} 2. \quad & a - x + 4y = 2 \\ & -3a + 4x - 2y = 14 \\ & -6a - 3x + 2y = 40 \end{aligned}$$

$$\begin{aligned} 6. \quad & -2x - 2y - 3z = -26 \\ & 2x + 3y + 2z = 21 \\ & 3x + 6y = 15 \end{aligned}$$

$$\begin{aligned} 3. \quad & -2b - 2u - 3x = 22 \\ & -3b + 2u - 2x = 18 \\ & -5b + 6u + x = 4 \end{aligned}$$

$$\begin{aligned} 7. \quad & -5v + 3x - z = -22 \\ & -4v + 3x - 5z = -5 \\ & 6v - 5z = 45 \end{aligned}$$

$$\begin{aligned} 4. \quad & -a + 3v + 5y = -17 \\ & a + v = -2 \\ & -3v + 3y = -6 \end{aligned}$$

$$\begin{aligned} 8. \quad & 6u + 2v + 2x = 8 \\ & -6u + 6v - 6x = -60 \\ & -4u + 4v + 2x = -10 \end{aligned}$$

## Linear Systems (J) Answers

Solve each system of equations.

$$\begin{aligned} 1. \quad & -3a - 5v - x = 16 \\ & 6a + 3v - 2x = -10 \\ & -4a + 5v - 6x = -72 \\ & a = 3, v = -6, x = 5 \end{aligned}$$

$$\begin{aligned} 5. \quad & -6a - 5u + 6x = -2 \\ & 3a + 2u - 5x = 8 \\ & 6u + x = -15 \\ & a = -1, u = -2, x = -3 \end{aligned}$$

$$\begin{aligned} 2. \quad & a - x + 4y = 2 \\ & -3a + 4x - 2y = 14 \\ & -6a - 3x + 2y = 40 \\ & a = -6, x = 0, y = 2 \end{aligned}$$

$$\begin{aligned} 6. \quad & -2x - 2y - 3z = -26 \\ & 2x + 3y + 2z = 21 \\ & 3x + 6y = 15 \\ & x = 3, y = 1, z = 6 \end{aligned}$$

$$\begin{aligned} 3. \quad & -2b - 2u - 3x = 22 \\ & -3b + 2u - 2x = 18 \\ & -5b + 6u + x = 4 \\ & b = -2, u = 0, x = -6 \end{aligned}$$

$$\begin{aligned} 7. \quad & -5v + 3x - z = -22 \\ & -4v + 3x - 5z = -5 \\ & 6v - 5z = 45 \\ & v = 5, x = 0, z = -3 \end{aligned}$$

$$\begin{aligned} 4. \quad & -a + 3v + 5y = -17 \\ & a + v = -2 \\ & -3v + 3y = -6 \\ & a = -1, v = -1, y = -3 \end{aligned}$$

$$\begin{aligned} 8. \quad & 6u + 2v + 2x = 8 \\ & -6u + 6v - 6x = -60 \\ & -4u + 4v + 2x = -10 \\ & u = 1, v = -4, x = 5 \end{aligned}$$