

Systems of Equations - Cramer's Rule

Solve each system of equations using Cramer's rule.

1) $6x + 2y - z = 23$
 $-20 = y + 3z$
 $x - y - z = 21$

2) $2a + 3b = 21 + c$
 $-9 + 3c = 4a + b$
 $3a - 5c = -26 + 2b$

3) $-9t = -25 - 6r - s$
 $-4r - s = 2t - 11$
 $-3t = 34 - 10r + 5s$

5) $t + u = 4 + 2s$
 $-4s + 2t - u = 8$
 $-6s - 3t + u = 0$

7) $3b + 7c - d = -15$
 $b - c + 5d = 19$
 $47 = 9b - 2c - 3d$

8) $-v + w = -3 - 7u$
 $5v - w = 26 - 2u$
 $v - 2w = -24 - 8u$

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Solve each system of equations using Cramer's rule.

$$\begin{aligned} 1) \quad & 6x + 2y - z = 23 \\ & -20 = y + 3z \\ & x - y - z = 21 \end{aligned}$$

$$\begin{aligned} 2) \quad & 2a + 3b = 21 + c \\ & -9 + 3c = 4a + b \\ & 3a - 5c = -26 + 2b \end{aligned}$$

(7, -11, -3)**(-8, 11, -4)**

$$\begin{aligned} 3) \quad & -9t = -25 - 6r - s \\ & -4r - s = 2t - 11 \\ & -3t = 34 - 10r + 5s \end{aligned}$$

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(3, -5, 2)

$$\begin{aligned} 5) \quad & t + u = 4 + 2s \\ & -4s + 2t - u = 8 \\ & -6s - 3t + u = 0 \end{aligned}$$

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(-1, 2, 0)

$$\begin{aligned} 7) \quad & 3b + 7c - d = -15 \\ & b - c + 5d = 19 \\ & 47 = 9b - 2c - 3d \end{aligned}$$

$$\begin{aligned} 8) \quad & -v + w = -3 - 7u \\ & 5v - w = 26 - 2u \\ & v - 2w = -24 - 8u \end{aligned}$$

(5, -4, 2)**(-1, 8, 12)**