

Matrices

Name: _____

Date: _____

Cramer's Rules

1

$$3x + 3y + z = 9$$

$$7x + 4y + 3z = 21$$

$$9x + 3y + 2z = 27$$

2

$$9x + 4y + 2z = 72$$

$$12x + 3y + z = 36$$

$$6x + 3y + 3z = 54$$

3

$$8x + 2y + 4z = 16$$

$$6x + y + 3z = 12$$

$$4x + y + 2z = 8$$

4

$$7x + 2y + z = 14$$

$$10x + 2y + 2z = 20$$

$$2x + 2y + 6z = 24$$

5

$$7x + 3y + 3z = 42$$

$$7x + y + 2z = 14$$

$$14x + 3y + z = 42$$

6

$$9x + 3y + 9z = 27$$

$$6x + 3y + 4z = 12$$

$$3x + 2y + z = 6$$

7

$$x + 7y + 9z = 63$$

$$x + 11y + 3z = 33$$

$$4x + 2y + 7z = 56$$

8

$$8x + 2y + 4z = 16$$

$$6x + 2y + 12z = 18$$

$$2x + y + 10z = 20$$

9

$$5x + 6y + 3z = 90$$

$$x + 18y + 5z = 90$$

$$10x + 3y + 3z = 90$$

10

$$2x + 4y + 2z = 16$$

$$2x + 10y + 2z = 40$$

$$9x + 2y + 2z = 36$$

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Cramer's Rules

1

$$\begin{aligned} 3x + 3y + z &= 9 \\ 7x + 4y + 3z &= 21 \\ 9x + 3y + 2z &= 27 \end{aligned} \quad \underline{(3, 0, 0)}$$

2

$$\begin{aligned} 9x + 4y + 2z &= 72 \\ 12x + 3y + z &= 36 \\ 6x + 3y + 3z &= 54 \end{aligned} \quad \underline{\left(\frac{-18}{5}, 27, \frac{-9}{5}\right)}$$

3

$$\begin{aligned} 8x + 2y + 4z &= 16 \\ 6x + y + 3z &= 12 \\ 4x + y + 2z &= 8 \end{aligned} \quad \underline{\text{No Solution}}$$

4

$$\begin{aligned} 7x + 2y + z &= 14 \\ 10x + 2y + 2z &= 20 \\ 2x + 2y + 6z &= 24 \end{aligned} \quad \underline{(1, 2, 3)}$$

5

$$\begin{aligned} 7x + 3y + 3z &= 42 \\ 7x + y + 2z &= 14 \\ 14x + 3y + z &= 42 \end{aligned} \quad \underline{(0, 14, 0)}$$

6

$$\begin{aligned} 9x + 3y + 9z &= 27 \\ 6x + 3y + 4z &= 12 \\ 3x + 2y + z &= 6 \end{aligned} \quad \underline{\text{No Solution}}$$

7

$$\begin{aligned} x + 7y + 9z &= 63 \\ x + 11y + 3z &= 33 \\ 4x + 2y + 7z &= 56 \end{aligned} \quad \underline{\left(\frac{27}{8}, \frac{9}{8}, \frac{23}{4}\right)}$$

8

$$\begin{aligned} 8x + 2y + 4z &= 16 \\ 6x + 2y + 12z &= 18 \\ 2x + y + 10z &= 20 \end{aligned} \quad \underline{\text{No Solution}}$$

9

$$\begin{aligned} 5x + 6y + 3z &= 90 \\ x + 18y + 5z &= 90 \\ 10x + 3y + 3z &= 90 \end{aligned} \quad \underline{\left(-10, \frac{-50}{3}, 80\right)}$$

10

$$\begin{aligned} 2x + 4y + 2z &= 16 \\ 2x + 10y + 2z &= 40 \\ 9x + 2y + 2z &= 36 \end{aligned} \quad \underline{(4, 4, -4)}$$