

Student Name: _____

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Determinants – Cramer’s Rule

Three Variables: DS1

Solve the following system of equations using Cramer’s rule:

$$\frac{2}{3}x + 4y + \frac{3}{2}z = 34$$

$$\frac{1}{2}x - \frac{3}{2}y + 2z = 9$$

$$\frac{3}{2}x + \frac{1}{3}y - \frac{1}{2}z = -22$$

$$\Delta =$$

$$\Delta x =$$

$$\Delta y =$$

$$\Delta z =$$

$$\frac{2}{3}x + \frac{3}{5}y + \frac{5}{3}z = -10$$

$$\frac{4}{3}x + \frac{1}{10}y + 2z = \frac{-5}{2}$$

$$\frac{2}{9}x + 4y - \frac{2}{3}z = \frac{-34}{3}$$

$$x =$$

$$y =$$

$$z =$$

PREVIEW

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$$\frac{-7}{4}x - \frac{5}{3}y + 2z =$$

$$\frac{5}{2}x + \frac{2}{3}y - \frac{7}{5}z = 4$$

$$4x - \frac{8}{3}y + 3z = 5$$

$$\Delta =$$

$$\Delta x =$$

$$\Delta y =$$

$$\Delta z =$$

$$y =$$

$$z =$$

$$\Delta y =$$

$$\Delta z =$$

$$x =$$

$$y =$$

$$z =$$

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Answer key

Determinants – Cramer’s Rule

Three Variables: DS1

$$\frac{2}{3}x + 4y + \frac{3}{2}z = 34$$

$$\frac{2}{3}x + \frac{3}{5}y + \frac{5}{3}z = -10$$

$$\frac{1}{2}x - \frac{3}{2}y + 2z = 9$$

$$\frac{4}{3}x + \frac{1}{10}y + 2z = \frac{-5}{2}$$

$$\frac{3}{2}x + \frac{1}{3}y - \frac{1}{2}z = -22$$

$$\frac{2}{9}x + 4y - \frac{2}{3}z = \frac{-34}{3}$$

$$\Delta = \frac{1201}{72}$$

$$\Delta = 577$$

$$\Delta x = \frac{-1201}{6}; \Delta y =$$

$$\frac{7}{15}; \Delta z = -\frac{577}{15}$$

$$x = \frac{\Delta x}{\Delta} = -12; y =$$

$$-5; z = \frac{\Delta z}{\Delta} = -9$$

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$$\frac{-7}{4}x - \frac{5}{3}y + 2z =$$

$$\frac{5}{2}x + \frac{2}{3}y - \frac{7}{5}z = 5$$

$$4x - \frac{8}{3}y + 3z = 5$$

$$\Delta = \frac{31}{5}$$

$$\Delta x = \frac{248}{5}; \Delta y = 2$$

$$9; \Delta z = \frac{267}{5}$$

$$x = \frac{\Delta x}{\Delta} = 8; y = \frac{\Delta y}{\Delta}$$

$$14; z = \frac{\Delta z}{\Delta} = 8$$