

Student Name: _____

Score: _____

Determinants – Cramer's Rule

Three Variables: ES2

Identify the solutions using Cramer's rule:

$$2x + 3y - 4z = 17$$

$$8x - 5y + 5z = -4$$

$$3x - 4y - 4z = -2$$

$$\Delta = \boxed{} \quad \Delta x = \boxed{} \quad \Delta y = \boxed{} \quad \Delta z = \boxed{}$$

$$x = \boxed{} \quad y = \boxed{} \quad z = \boxed{}$$

$$2x + 5y - z = -7$$

$$-6x - y + 3z = -7$$

$$-7x + 4y + 4z = -1$$

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$$\Delta z = \boxed{}$$

$$z = \boxed{}$$

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

$$4x - y - 2z = 19$$

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

$$\Delta z = \boxed{}$$

$$z = \boxed{}$$

$$3x + 3y - 7z = 11$$

$$-4x - 6y + z = -19$$

$$3x + 5y - 7z = 7$$

$$\Delta = \boxed{} \quad \Delta x = \boxed{} \quad \Delta y = \boxed{} \quad \Delta z = \boxed{}$$

$$x = \boxed{} \quad y = \boxed{} \quad z = \boxed{}$$

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Answer key

Determinants – Cramer's Rule

Three Variables: ES2

$$\Delta = 289$$

$$\Delta x = 578; \Delta y = 867; \Delta z = -289$$

$$x = \frac{\Delta x}{\Delta} = 2; y = \frac{\Delta y}{\Delta} = 3; z = \frac{\Delta z}{\Delta} = -1$$

$$\Delta = 14$$

$$\Delta x = 56; \Delta y = -28; \Delta z = 7$$

$$x = \frac{\Delta x}{\Delta} = 4; y = \frac{\Delta y}{\Delta} = -2; z = \frac{\Delta z}{\Delta} = 0.5$$

$$\Delta = 5$$

$$\Delta x = 35; \Delta y = 15; \Delta z = 10$$

$$x = \frac{\Delta x}{\Delta} = 7; y = \frac{\Delta y}{\Delta} = 3; z = \frac{\Delta z}{\Delta} = 2$$

$$\Delta = 50$$

$$\Delta x = 400; \Delta y = -100; \Delta z = 50$$

$$x = \frac{\Delta x}{\Delta} = 8; y = \frac{\Delta y}{\Delta} = -2; z = \frac{\Delta z}{\Delta} = 1$$

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