

Triple Variable Simultaneous Equations

Solve these sets of simultaneous equations:

$$\begin{aligned} 1. \quad & 2a + b + c = 11 \\ & a + 2b + 3c = 20 \\ & 3a + 3b + 2c = 23 \end{aligned}$$

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

$$\begin{aligned} 3. \quad & p + q + r = 6 \\ & 2p + q - r = 1 \\ & p - q + r = 2 \end{aligned}$$

$$\begin{aligned} 4. \quad & 2s + 3t + u = 1 \\ & s - t + u = 4 \\ & 5s + t + 3u = 10 \end{aligned}$$

$$\begin{aligned} 5. \quad & 7x + y + z = -1 \\ & x - 3y + 2z = 0 \\ & x + 4y - 3z = 4 \end{aligned}$$

$$\begin{aligned} 6. \quad & 2d - 3e + 5f = -1 \\ & 3d - 4e + 2f = 1 \\ & 5d + 3f = 7e \end{aligned}$$

$$\begin{aligned} 7. \quad & 10m + 20n + 40\lambda = 1 \\ & 3m + 7n + 10\lambda = 0 \\ & 25m + 12n + 37\lambda = 0 \end{aligned}$$

What about these?

What value do you assign to each icon to make the equations true?

$$\begin{aligned} & \text{🐰} + \text{🐰} + \text{🥚} + \text{🐣} = 11 \\ & \text{🐰} + \text{🥚} + \text{🥚} + \text{🐣} + \text{🐣} + \text{🐣} = 20 \\ & \text{🐰} + \text{🐰} + \text{🐰} + \text{🥚} + \text{🐣} + \text{🐣} = 17 \end{aligned}$$

What value do you assign to each icon to make the equations true?

$$\begin{aligned} & \text{🐰} + \text{🐰} + \text{🥚} + \text{🐣} = 0 \\ & \text{🐰} + \text{🥚} + \text{🥚} + \text{🥚} + \text{🥚} - (\text{🐣} + \text{🐣} + \text{🐣}) = 0 \\ & \text{🐰} - (\text{🥚} + \text{🥚} + \text{🥚}) = 16 \end{aligned}$$

Try these...

$$\begin{aligned} & a + b + c + d = 0 \\ & 2a + b + 2c + d = -1 \\ & a + b - c - d = 0 \\ & a + 2b - c - 2d = 1 \end{aligned}$$

$$\begin{aligned} & x^2 + y + z = 1988 \\ & x + y^2 + z = 2020 \end{aligned}$$

Triple Variable Simultaneous Equations

Solve these sets of simultaneous equations:

1. $2a + b + c = 11$
 $a + 2b + 3c = 20$
 $3a + b + 2c = 23$
 $a=2, b=3, c=4$

2. $2x + y + z = 0$
 $x + 4y - 3z = 0$
 $x - 3y = 16$
 $x=4, y=-4, z=-4$

3. $p + q + r = 6$
 $2p + q - r = 1$
 $p - q + r = 2$
 $1, 2, 3$

4. $2s + 3t + u = 1$
 $s - t + u = 4$
 $5s + t + 3u = 10$
 $1, -1, 2$

5. $7x + y + z = -1$
 $x - 3y + 2z = 0$
 $x + 4y - 3z = 4$
 $1, -3, -5$

6. $2d - 3e + 5f = -1$
 $3d - 4e + 2f = 1$
 $5d + 3f = 7e$
 $7, 5, 0$

7. $10m + 20n + 40\lambda = 1$
 $3m + 7n + 10\lambda = 0$
 $25m + 12n + 37\lambda = 0$
 $-0.1, -0.1, 0.1$

What about these?

$$\begin{aligned} \text{Rabbit} &= 2 \\ \text{Egg} &= 3 \\ \text{Chick} &= 4 \end{aligned}$$

$$\begin{aligned} \text{Rabbit} &= 4 \\ \text{Egg} &= -4 \\ \text{Chick} &= 4 \end{aligned}$$

Try these...

$$\begin{aligned} a &= 5 \\ b &= 4 \\ c &= -6 \\ d &= -3 \end{aligned}$$

$$\begin{aligned} x &= 16 \\ y &= 17 \\ z &= 1715 \end{aligned}$$