Three Letters: Swap One In

SY12-V1 · storyboard · SY12 Three equations, three letters. Read each picture with its sentences.

Picture 1

$$x = 6 - y - z$$ from the first

$$2(6 - y - z) - y + z = 3$$ into the second

$$3y + z = 9$$

$$(6 - y - z) + 2y - z = 2$$ into the third

$$y - 2z = -4$$

$$\boxed{y = 2, \quad z = 3}$$ solve the pair

$$\boxed{x = 6 - 2 - 3 = 1}$$ put both back

1. Solve x + y + z = 6, 2x − y + z = 3 and x + 2y − z = 2.
2. Get x alone in the first equation: x = 6 − y − z.
3. Swap it into the second, in brackets.
4. That gives 3y + z = 9.
5. Now swap it into the third as well.
6. That gives y − 2z = −4.
7. Solve the pair: y = 2 and z = 3.
8. Put both back: x = 1.
9. The triple is one, two, three.

Picture 2

Trap $x = 6 - y - z$

$\times$ into the second only

✓ into the second and the third

10. Watch for the trap: swapping it into only one equation.
11. For two letters you need two equations.