Multiply Both

SY06-V2 · storyboard · SY06 Multiply, then eliminate. Read each picture with its sentences.

Picture 1

Solve the system $2x + 3y = 12$, $3x + 4y = 17$.

$$6x + 9y = 36 \quad \text{first } \times 3$$

$$6x + 8y = 34 \quad \text{second } \times 2$$

$$\boxed{y = 2} \quad \text{subtract}$$

$$\boxed{2x + 6 = 12, \quad x = 3} \quad \text{put it back}$$

1. Solve the system 2x + 3y = 12 and 3x + 4y = 17.
2. To cancel x, aim for 6x.
3. Times three: 6x + 9y = 36.
4. Times two: 6x + 8y = 34.
5. Both have 6x, so subtract: y = 2.
6. Put it back: 2x + 6 = 12, so x = 3.
7. The solution is three, two.

Picture 2

Trap $6x$ and $6x$

$\times$ add: $12x + 17y = 70$

✓ subtract: $y = 2$

Least common multiple: smaller numbers, fewer slips

4 and $6 \rightarrow 12,$ not 24

8. Watch for the trap: adding equal coefficients.
9. 6x and 6x cancel only when you subtract.
10. Least common multiple: smaller numbers, fewer slips.