Multiply One, Then Cancel

SY06-V1 · storyboard · SY06 Multiply, then eliminate. Read each picture with its sentences.

Picture 1

Solve the system $x + 3y = 7,\ 2x + 5y = 12.$

$$-2x - 6y = -14$$ first $\times(-2)$

$$-y = -2$$ add the second

$$\boxed{y = 2}$$

$$\boxed{x + 6 = 7,\quad x = 1}$$ put it back

1. Solve the system x + 3y = 7 and 2x + 5y = 12.
2. Multiply the first equation by negative two, every term: −2x − 6y = −14.
3. Add the second equation: −2x and 2x cancel, and −y = −2.
4. So y = 2.
5. Put it back into the first: x + 6 = 7, so x = 1.
6. The solution is one, two.

Picture 2

Trap $-2 \times (x + 3y = 7)$

$\times \; -2x - 6y = 7$

$\checkmark \; -2x - 6y = -14$

Choose the multiplier that makes a letter match

x and $2x$: $\times(-2)$, then add

7. Watch for the trap: multiplying only the letters.
8. The seven is multiplied by negative two as well.
9. Choose the multiplier that makes one letter's coefficients equal or opposite.