Like with Like

EX03-V1 · storyboard · EX03 Combine like terms. Read each picture with its sentences.

Picture 1

Simplify $(4x + 5) + (7x + 3)$.

$$4x + 7x + 5 + 3 \quad \text{group like terms}$$

$$= \boxed{11x + 8}$$

Check: $x = 1$: $\quad 9 + 10 = 19 = 11 + 8$ ✓

1. Simplify (4x + 5) + (7x + 3).
2. Group the like terms: the x terms together, and the numbers together.
3. Four x plus seven x is eleven x, and five plus three is eight: 11x + 8.
4. Check with x = 1: the original gives nine plus ten, which is 19, and eleven plus eight is 19 too.

Picture 2

Simplify $(3r - 2) + (3r - 4) + (7 - 5r)$.

$$3r + 3r - 5r - 2 - 4 + 7 \quad \text{keep every sign}$$

$$= \boxed{r + 1}$$

5. Now simplify (3r − 2) + (3r − 4) + (7 − 5r).
6. Take the brackets away and group the terms, keeping every sign.
7. Three plus three minus five is one lot of r, and the numbers make one: r + 1.

Picture 3

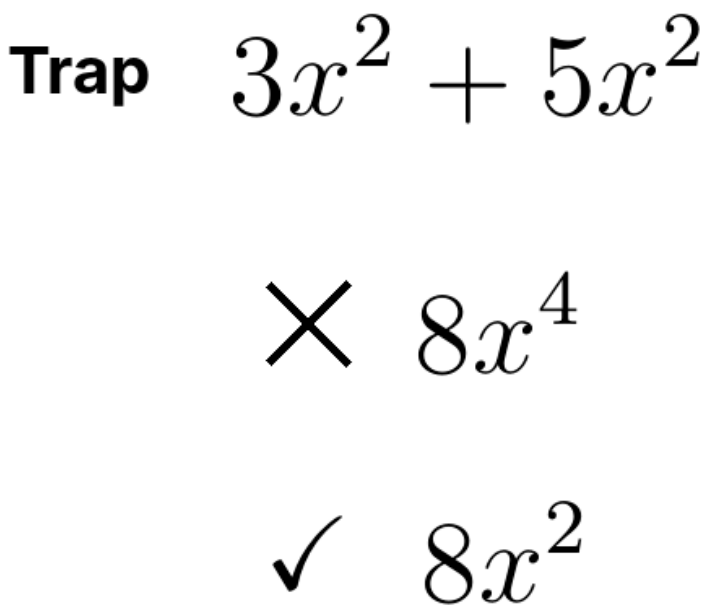
Trap $(3r - 2) + (3r - 4) + (7 - 5r)$

$$\times \; 11r + 1$$

$$\checkmark \quad r + 1$$

8. Watch for the trap: losing a sign.
9. Turning minus five r into plus five r gives 11r + 1, which is wrong.
10. Keep the minus: r + 1.

Picture 4



11. One more: the power never changes.
12. $3x^2 + 5x^2$ is not $8x^4$.
13. Add the coefficients only: $8x^2$.