# Take Away Every Term

EX09-V1 · storyboard · EX09 Subtract an expression. Read each picture with its sentences.

**Picture 1**

Simplify $(x+3)-(3x+9)$.

$$x+3-3x-9 \quad \text{both signs change}$$

$$= x-3x+3-9 \quad \text{group like terms}$$

$$= \boxed{-2x-6}$$

**Check:** $x=1$: $\quad 4-12=-8=-2-6$ ✓

1. Simplify: the bracket x + 3, take away the bracket 3x + 9.
2. Take the brackets away.
3. The second bracket is subtracted, so both of its terms change sign: minus three x, minus nine.
4. Group the like terms.
5. One x take away three x is negative two x, and three take away nine is negative six: −2x − 6.
6. Check with x = 1: four take away twelve is −8, and negative two minus six is −8 too.

**Picture 2**

Simplify $(t^2 - 5t + 4) - (t^2 - 7)$.

$$t^2 - 5t + 4 - t^2 + 7$$ minus a minus is plus

$$= \boxed{-5t + 11} \quad t^2 - t^2 = 0$$

7. Now take $t^2 - 7$ away from $t^2 - 5t + 4$.
8. Every sign in the second bracket changes: minus $t^2$, and minus negative seven is plus seven.
9. The $t^2$ terms cancel, and four plus seven is eleven: $-5t + 11$.

**Picture 3**

**Trap** $(x + 3) - (3x + 9)$

$$\times \quad -2x + 12$$

$$\checkmark \quad -2x - 6$$

10. Watch for the trap: taking away only the first term.
11. The answer is not $-2x + 12$.
12. The nine is subtracted too: $-2x - 6$.

**Picture 4**

**Trap** $-(t^2 - 7)$

✗ $-t^2 - 7$

✓ $-t^2 + 7$

13. And minus a minus is plus.
14. Taking away the bracket $t^2 - 7$ is not $-t^2 - 7$.
15. Taking away negative seven adds seven: $-t^2 + 7$.