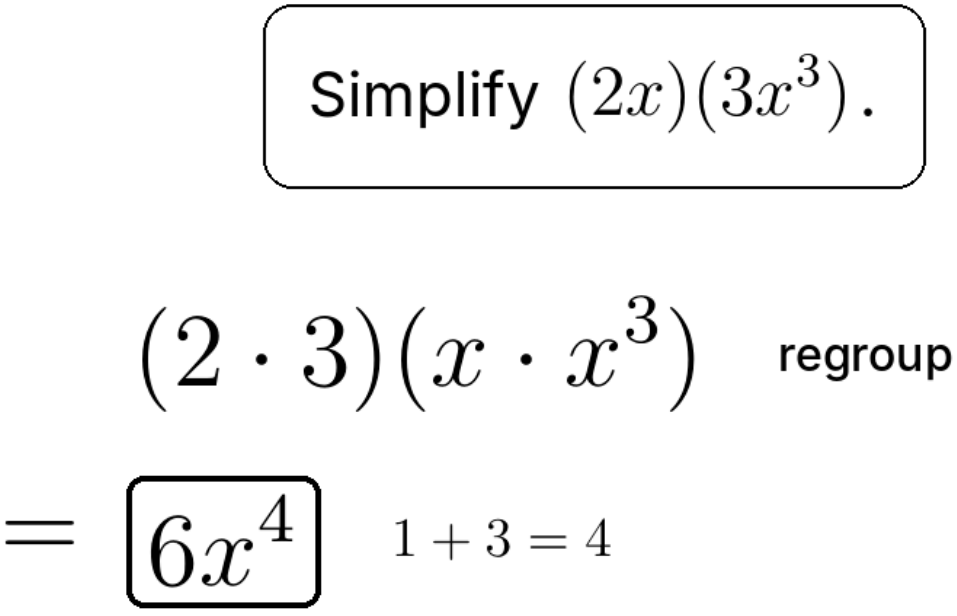
Group and Multiply

EX05-V1 · storyboard · EX05 Multiply monomials & powers of products. Read each picture with its sentences.

Picture 1



1. Simplify two x times three x cubed.
2. You can multiply in any order, so regroup: two times three, and x times x^3.
3. That makes $6x^4$.

Picture 2

Simplify $(2x)^3$.

$$(2x)(2x)(2x)$$

$$= (2 \cdot 2 \cdot 2)(x \cdot x \cdot x) \quad \text{regroup}$$

$$= \boxed{8x^3}$$

4. Now two x, all cubed.
5. Write it out: three factors of two x.
6. Regroup the numbers and the letters.
7. Two cubed is eight, so $8x^3$.

Picture 3

Trap $(2x)^3$

✗ $2x^3$

✓ $8x^3$

8. Watch for the trap: cubing only the letter.
9. Two x, all cubed, is not $2x^3$: the two is cubed too.

Picture 4

Trap $(2+x)^3$

✗ $8+x^3$

✓ $x=1: \quad (2+1)^3 = 27 \neq 9 = 8+1^3$

10. But this only works for products.
11. Two plus x, all cubed, is not $8 + x^3$: try x = 1, which gives 27 and 9.