4-2

Using the Distributive Property

(pages 137–139)

You can use grouping symbols such as parentheses to show multiplication. For example, you can write 2×4 as $2(4)$ or $(2)4$. Grouping symbols affect the order of operations.

Order of Operations with Grouping Symbols	1. Do all operations within grouping symbols first. 2. Do all powers before other operations. 3. Multiply and divide in order from left to right. 4. Add and subtract in order from left to right.

With grouping symbols, you can use the **distributive property** to solve multiplication problems in parts. You can even do the multiplication mentally.

Distributive Property	**Arithmetic:** $4(2 + 7) = 4 \cdot 2 + 4 \cdot 7$ **Algebra:** For any numbers a, b, and c, $a(b + c) = ab + ac$.

EXAMPLES

A Rewrite $4(10 + 5)$ using the distributive property.

$4(10 + 5) = 4 \times 10 + 4 \times 5$

B Find 5×12 using the distributive property.

$5 \times 12 = 5(10 + 2)$ *Use $10 + 2$ for 12.*
$= 5 \times 10 + 5 \times 2$
$= 50 + 10$
$= 60$

Try These Together

Find each product mentally. Use the distributive property.

1. 9×17

HINT: Change 17 into an addition expression.

2. 16×4

HINT: Change 16 into an addition expression.

PRACTICE

Rewrite each expression using the distributive property.

3. $7(60 + 8)$

4. $8(50 + 1)$

5. $52 \times 50 + 52 \times 0.6$

6. $6(70 + 9)$

7. $2(20 + 7)$

8. $19 \times 60 + 19 \times 0.7$

Find each product mentally. Use the distributive property.

9. 9×16

10. 106×5

11. 8×65

12. 9.7×8

13. 1.1×3

14. 204×5

15. **Standardized Test Practice** Find 1.8×5 mentally using the distributive property.

A 0.9   **B** 5.4   **C** 9   **D** 54