

Grade 3 - Properties of Multiplication - Answer Key

Common Core 3.OA.B.5 · maths-pdf.fr/en/

This **properties multiplication answers** for 3rd Grade covers properties of multiplication (Common Core 3.OA.B.5), with a free PDF to print.

Every solution shows the multiplication facts that were used. Check each product with the property named in the lesson, and compare your steps with the ones shown here.

Grade 3 · Common Core State Standards: **3.OA.B.5**

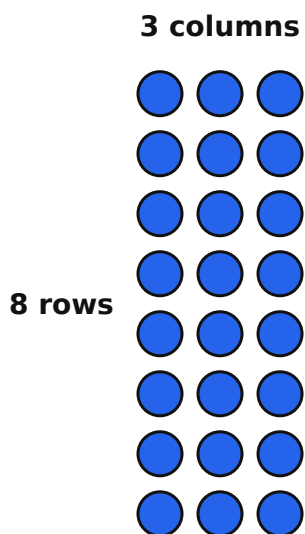
Properties multiplication answers: exercises 1 to 10

Exercise 1 - Turn-around fact

The order of two factors does not change the product. $7 \times 5 = 35$ and $5 \times 7 = 35$.
 $n = 7$

Exercise 2 - Turn the array

The array has 3 rows of 8: $3 \times 8 = 24$. Turn it to get 8 rows of 3: $8 \times 3 = 24$.



The array turned: 8 rows of 3.

Product: 24

Exercise 3 - True or false

$9 \times 2 = 18$ and $2 \times 9 = 18$. The products match, so the commutative property holds.

True

Exercise 4 - Use a known fact

Turn the factors around: $9 \times 6 = 6 \times 9$.

$$9 \times 6 = 54$$

Exercise 5 - Move the parentheses

The same three factors are in both groupings: 2, 3, and 5. So $n = 3$. Check: $(2 \times 3) \times 5 = 6 \times 5 = 30$ and $2 \times (3 \times 5) = 2 \times 15 = 30$.

$$n = 3$$

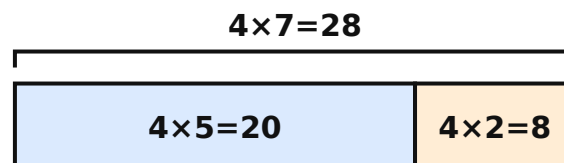
Exercise 6 - Group first

First, $3 \times 2 = 6$. Then $6 \times 4 = 24$.

24

Exercise 7 - Split the array

Blue: $4 \times 5 = 20$. Orange: $4 \times 2 = 8$. Add the parts: $20 + 8 = 28$.



The two parts add up to the whole array.

$$4 \times 7 = 4 \times 5 + 4 \times 2 = 28$$

Exercise 8 - Break apart a factor

Since $7 = 5 + 2$, $n = 2$. Then $6 \times 5 = 30$ and $6 \times 2 = 12$. $30 + 12 = 42$.

$n = 2$, **product 42**

Exercise 9 - Split a factor

$8 \times 6 = 8 \times 4 + 8 \times 2$. $8 \times 4 = 32$ and $8 \times 2 = 16$. $32 + 16 = 48$.

48

Exercise 10 - Multiply by a sum

Add first: $4 + 3 = 7$, then $7 \times 7 = 49$.

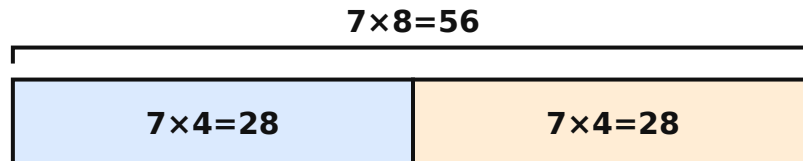
Multiply each part: $7 \times 4 = 28$ and $7 \times 3 = 21$, then $28 + 21 = 49$.

Both ways give 49

Exercises 11 and up

Exercise 11 - Double a fact

Since $8 = 4 + 4$, $7 \times 8 = 7 \times 4 + 7 \times 4 = 28 + 28 = 56$.



Two copies of 7×4 make 7×8 .

56

Exercise 12 - Easier order

$5 \times 7 \times 2 = 7 \times (5 \times 2)$. $5 \times 2 = 10$. Then $7 \times 10 = 70$.

70

Exercise 13 - Two ways

Way 1: $(2 \times 4) \times 5 = 8 \times 5 = 40$.

Way 2: $2 \times (4 \times 5) = 2 \times 20 = 40$.

40

Exercise 14 - Pick the true sentence

$8 \times 7 = 56$. A: $40 + 16 = 56$. B: $40 + 14 = 54$. C: $40 + 2 = 42$.

A

Exercise 15 - Muffin boxes

$2 \times 3 \times 4$. $2 \times 3 = 6$ trays in all. Then $6 \times 4 = 24$.

24 muffins

Exercise 16 - Theater seats

$9 \times 6 = 9 \times 5 + 9 \times 1$. $9 \times 5 = 45$ and $9 \times 1 = 9$. $45 + 9 = 54$.

$$9 \times 6 = 54$$

$9 \times 5 = 45$	$9 \times 1 = 9$

Seats in the 5-seat parts and the 1-seat parts.

54 seats

Exercise 17 - Markers and crayons

Way 1: $4 \times 6 = 24$ and $4 \times 3 = 12$, then $24 + 12 = 36$.

Way 2: Each pair of packs holds $6 + 3 = 9$, so $4 \times 9 = 36$.

36 items

Exercise 18 - Cookie trays

$4 \times 3 \times 4$. Rows on all trays: $4 \times 3 = 12$. Then $12 \times 4 = 48$.

(Check: each tray has $3 \times 4 = 12$, and $4 \times 12 = 48$.)

48 cookies

Exercise 19 - Orange bags

$7 \times 6 = 6 \times 7$: commutative property. $6 \times 7 = 6 \times 5 + 6 \times 2$: distributive property. $30 + 12 = 42$.

42 oranges

Exercise 20 - Egg cartons

$5 \times 2 \times 6$. Group $5 \times 2 = 10$ first. Then $10 \times 6 = 60$.

60 eggs

Key facts behind this properties multiplication answers

Key facts

- Commutative: $3 \times 6 = 6 \times 3$. The order of two factors does not change the product.
- Associative: $(2 \times 3) \times 4 = 2 \times (3 \times 4)$. Regrouping three factors does not change the product.
- Distributive: $6 \times 7 = 6 \times 5 + 6 \times 2$. Split a factor, multiply the parts, then add.
- An array turned on its side shows the commutative property.
- Known facts help you find unknown facts, such as 5s and 2s for 7s and 8s.

How to use this properties multiplication answers

Cover each solution, solve the exercise again, then uncover it and compare every line. If your answer differs, find the first step that changed and redo the exercise from there.

Download the properties multiplication answers as a PDF with the button below and keep it with your notes.