

Grade 3 · Properties of Multiplication · Quiz

Common Core 3.OA.B.5 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

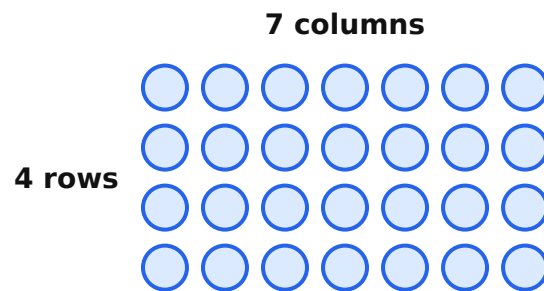
Try these 10 questions on the commutative, associative and distributive properties of multiplication. Look at each picture first. Pick one answer, then read the explanation to learn from any mistake.

Grade 3 Common Core: 3.OA.B.5

Questions

Question 1

Which multiplication sentence matches the array turned around?



An array with 4 rows and 7 columns.

- A. 4×4
- B. 7×7
- C. $4 + 7$
- D. 7×4

Question 2

$6 \times 9 = 9 \times ?$ What number does the ? stand for?

- A. 9
- B. 6
- C. 54
- D. 15

Question 3

Which property says that $3 \times 8 = 8 \times 3$?

- A. Associative property

- B. Distributive property
- C. Commutative property
- D. Addition property

Question 4

What is $(2 \times 4) \times 3$?

- A. 9
- B. 24
- C. 14
- D. 32

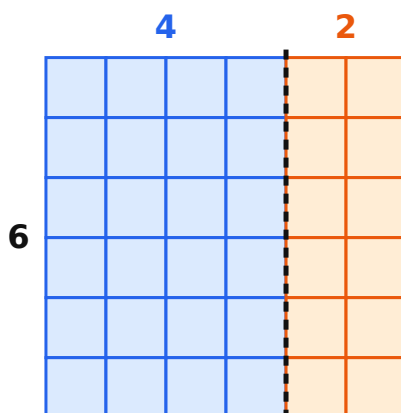
Question 5

Find the missing number. $(3 \times 4) \times 2 = 3 \times (? \times 2)$

- A. 3
- B. 2
- C. 24
- D. 4

Question 6

Which expression gives the number of squares in the whole rectangle?

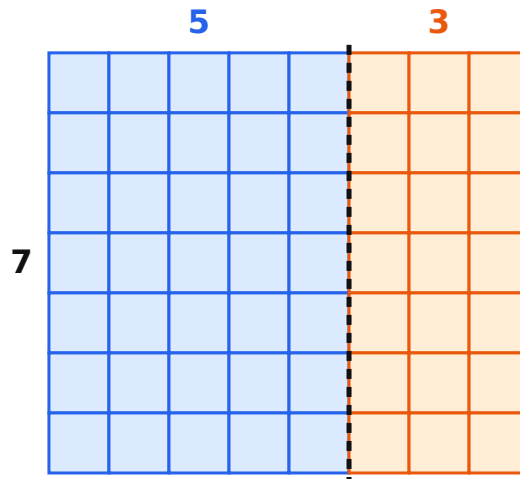


A rectangle with 6 rows split into 4 columns and 2 columns.

- A. $6 \times 4 + 2$
- B. $6 + 4 + 2$
- C. $6 \times 4 + 6 \times 2$
- D. $4 \times 2 + 6$

Question 7

The rectangle shows 7×8 . What is $7 \times 5 + 7 \times 3$?



A 7 by 8 rectangle split into 5 columns and 3 columns.

- A. 38
- B. 15
- C. 56
- D. 42

Question 8

Which shows a correct way to break apart 9×6 ?

- A. $9 \times (5 + 1)$
- B. $9 \times (5 + 2)$
- C. $9 + (5 \times 1)$
- D. $(9 \times 5) \times 1$

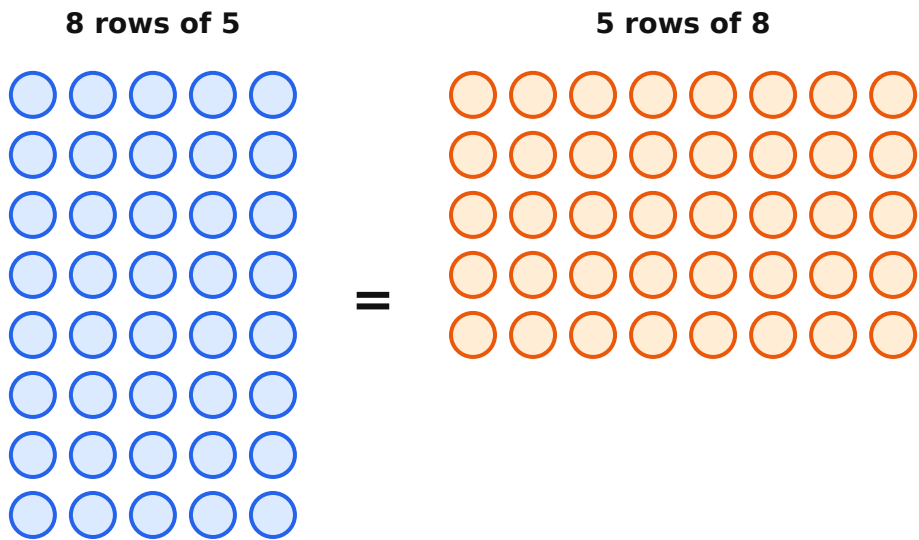
Question 9

What is $5 \times 2 \times 8$?

- A. 15
- B. 80
- C. 40
- D. 18

Question 10

Mei has 8 rows of 5 stickers. Liam has 5 rows of 8 stickers. Which statement is true?



Mei: 8 rows of 5. Liam: 5 rows of 8.

- A. They have the same number of stickers.
- B. Mei has more because she has more rows.
- C. Liam has more because he has more per row.
- D. They cannot be compared without counting.

Answer key

1. **D** – Turning the array gives 7 rows of 4, so the sentence is 7×4 . A common mistake is to add the numbers instead of multiplying.
2. **B** – Swap the factors: $6 \times 9 = 9 \times 6$. The missing number is 6. Students sometimes write the product, 54, instead of the missing factor.
3. **C** – Swapping the two factors is the commutative property. The associative property is about grouping three factors.
4. **B** – First $2 \times 4 = 8$, then $8 \times 3 = 24$. The wrong answer 9 comes from adding the numbers.
5. **D** – The associative property keeps the order 3, 4, 2 and moves the parentheses, so the missing number is 4. The product, 24, is not the missing number.
6. **C** – Each part has 6 rows, so the parts are 6×4 and 6×2 . Add them: $24 + 12 = 36$. Forgetting to multiply the 6 by the second part is a common slip.
7. **C** – $7 \times 5 = 35$ and $7 \times 3 = 21$, and $35 + 21 = 56$. The answer 38 comes from $35 + 3$, which skips multiplying the 7 by 3.
8. **A** – $6 = 5 + 1$, so $9 \times 6 = 9 \times 5 + 9 \times 1$. In the second choice, $5 + 2$ is 7, not 6. The choice $(9 \times 5) \times 1$ equals 45, not 54.
9. **B** – Group $5 \times 2 = 10$ first, then $10 \times 8 = 80$. Adding the numbers gives 15, which is not a product.
10. **A** – 8×5 and 5×8 both equal 40. The commutative property says the order of the factors does not change the product.

Remember:

- Commutative property: you can swap the factors, so $3 \times 5 = 5 \times 3$.
- Associative property: you can regroup three factors, so $(2 \times 3) \times 4 = 2 \times (3 \times 4)$.
- Distributive property: $8 \times 7 = 8 \times 5 + 8 \times 2 = 40 + 16 = 56$.
- An array or area model shows why each property is true.
- Properties turn hard facts into facts you already know.