

Grade 3 · Properties of Multiplication · Test Answer Key

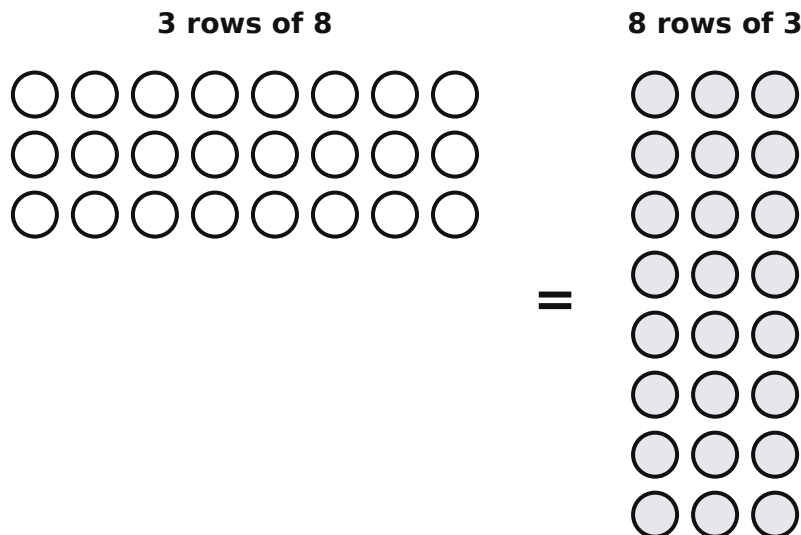
Common Core 3.OA.B.5 · mathovore.fr

Use this key to grade the test. Each solution shows one correct method, and the scoring note explains how to award the points. Accept other correct methods, such as a different split of a factor or a different grouping of three factors.

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

Question 1: Turn-around facts (2 points)

- a. 3 rows of 8: $3 \times 8 = 24$.
- b. 8 rows of 3: $8 \times 3 = 24$.



Scoring: 1 point for each correct sentence with its product. Give the point for part b if the factors are swapped, even if part a is wrong.

Question 2: Fill in the blanks (2 points)

- a. **9**. Swap the factors: $9 \times 6 = 6 \times 9$.
- b. **7**. Swap the factors: $7 \times 4 = 4 \times 7$.

Scoring: 1 point for each correct number.

Question 3: Equal or not equal (2 points)

- a. $7 \times 3 = 21$ and $3 \times 7 = 21$. Answer: **equal**.
b. $6 \times 4 = 24$ and $5 \times 5 = 25$. Answer: **not equal**.

Scoring: 1 point for each correct answer supported by the two products.

Question 4: Group three factors (2 points)

- a. $3 \times 2 = 6$, then $6 \times 5 = 30$. Answer: **30**.
b. $2 \times 5 = 10$, then $3 \times 10 = 30$. Answer: **30**.

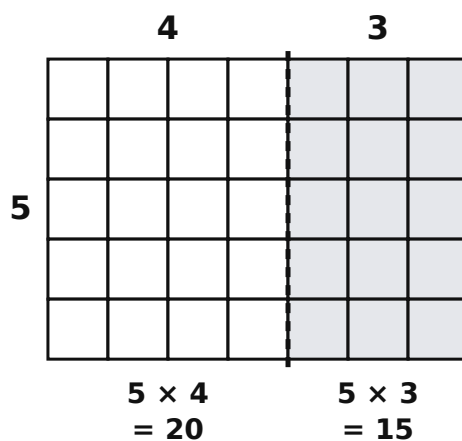
$$\boxed{(3 \times 2)} \times \boxed{5} = \boxed{6 \times 5} = \boxed{30}$$
$$\boxed{3} \times \boxed{(2 \times 5)} = \boxed{3 \times 10} = \boxed{30}$$

Both groupings give 30.

Scoring: 1 point for each correct product.

Question 5: Area model (3 points)

- a. Left part has 5 rows and 4 columns: $5 \times 4 = 20$.
b. Right part has 5 rows and 3 columns: $5 \times 3 = 15$.
c. $20 + 15 = 35$. Check: $5 \times 7 = 35$. Answer: **35 squares**.



20 squares plus 15 squares is 35 squares.

Scoring: 1 point for each part.

Question 6: Break apart a factor (3 points)

Split 7 into smaller numbers, for example $7 = 4 + 3$. Then $8 \times 4 = 32$ and $8 \times 3 = 24$. Add:

$$32+24=56.$$

Answer: $8 \times 7 = 56$.

Scoring: 1 point for splitting a factor into two numbers that add to it; 1 point for both correct partial products; 1 point for the correct sum. Any correct split, such as $5 + 2$, earns full credit.

Question 7: Crayon shelves (3 points)

- a. $2 \times 5 \times 7$, or with parentheses $(2 \times 5) \times 7$.
- b. $2 \times 5 = 10$, then $10 \times 7 = 70$. Answer: **70 crayons**.

Scoring: part a 1 point for three factors multiplied. Part b 1 point for a correct first product (10 boxes, or 35 crayons on one shelf) and 1 point for the total 70. Accept any grouping.

Question 8: Flower rows (3 points)

- a. $6 \times 8 = 48$ and $8 \times 6 = 48$. Each child plants **48 flowers**.
- b. Neither. They plant **the same number**.
- c. The **commutative property**: swapping the factors does not change the product.

Scoring: 1 point for each part.

Total
20 points