

Grade 3 - Properties of Multiplication - Test Answer Key

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

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

Use this key to score the 20-point test. Each answer shows full work, and each scoring note tells how the points are earned. Give partial credit when the method is right but a fact is wrong.

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

Properties multiplication test answers: worked solutions

Question 1 - Read an array [2 pts]

- a. 5 rows of 9 dots: $5 \times 9 = 45$.
- b. Turn the array: $9 \times 5 = 45$. The product is 45.

Scoring: 1 point for a correct sentence with product in (a); 1 point for the turned sentence in (b).

Question 2 - Missing factors [2 pts]

- a. $8 \times 3 = 3 \times 8$, so $n = 3$.
- b. $9 \times 6 = 6 \times 9 = 54$.

Scoring: 1 point for each correct answer.

Question 3 - Regroup the factors [2 pts]

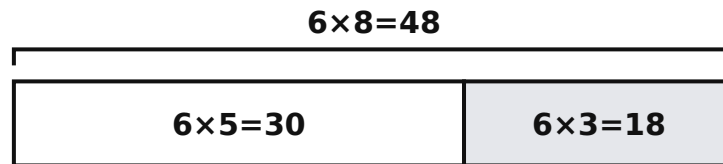
- a. $2 \times 4 = 8$, then $8 \times 5 = 40$.
- b. $4 \times 5 = 20$, then $2 \times 20 = 40$.

Both products are 40.

Scoring: 1 point for each correct product.

Question 4 - Split the array [2 pts]

- a. $6 \times 8 = 6 \times 5 + 6 \times 3$.
- b. $6 \times 5 = 30$ and $6 \times 3 = 18$, and $30 + 18 = 48$.



Left part, right part, and total.

Scoring: 1 point for each part.

Question 5 - Complete the sentence [2 pts]

- a. $9 = 5 + 4$, so $n = 4$.
- b. $7 \times 5 = 35$ and $7 \times 4 = 28$. $35 + 28 = 63$.

Scoring: 1 point for each correct answer.

Question 6 - Friendly products [2 pts]

- a. $5 \times 2 = 10$, then $10 \times 8 = 80$.
- b. $4 \times 5 = 20$, then $20 \times 3 = 60$.

Scoring: 1 point for each correct product.

Question 7 - Card binders [3 pts]

- a. $3 \times 4 = 12$ pages. $12 \times 6 = 72$ cards.
- b. $3 \times (4 \times 6) = 3 \times 24 = 72$.

Scoring: In (a), 1 point for 12 pages and 1 point for 72 cards. In (b), 1 point for a valid regrouping that gives 72.

Question 8 - Library shelves [3 pts]

- a. $7 \times 6 = 42$ red books and $7 \times 4 = 28$ blue books. $42 + 28 = 70$.
- b. Each shelf holds $6 + 4 = 10$: $7 \times 10 = 70$.

70 books	
$7 \times 6 = 42$	$7 \times 4 = 28$

Red books and blue books.

Scoring: In (a), 1 point for the two correct products and 1 point for the sum 70. In (b), 1 point for 7×10 .

Question 9 - Find the mistake [2 pts]

- Ben split 7 into $5+2$ but multiplied the 2 by 7 instead of by 6. Each part must be multiplied by the other factor, 6.
- $6 \times 7 = 6 \times 5 + 6 \times 2 = 30 + 12 = 42$.

Scoring: 1 point for a clear explanation; 1 point for the correct sentence and product 42.

Total score
Total
20 points

Key facts behind this properties multiplication test 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 test answers

Score your test with the point values shown for each question. Then read the worked solution of every question where you lost points and note the method to review.