

Name: _____

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Properties of Multiplication

Understanding properties helps you solve harder problems faster.

Commutative	Associative	Distributive	Identity	Zero
Order doesn't matter	Grouping doesn't matter	Break apart a factor	Any number $\times$ 1 = itself	Any number $\times$ 0 = 0
$6 \times 9 = 9 \times 6 = 54$	$(2 \times 3) \times 4 = 2 \times (3 \times 4)$	$7 \times 8 = 7 \times (5 + 3)$ $= 35 + 21 = 56$	$9 \times 1 = 9$	$47 \times 0 = 0$

Section A — Name the Property

Write the name of the property shown: Commutative, Associative, Distributive, Identity, or Zero.

1. $8 \times 7 = 7 \times 8 \rightarrow$ _____

4. $9 \times 1 = 9 \rightarrow$ _____

2. $(3 \times 4) \times 5 = 3 \times (4 \times 5) \rightarrow$

5. $5 \times 12 = 5 \times 10 + 5 \times 2 \rightarrow$

3. $6 \times 0 = 0 \rightarrow$ _____

6. $11 \times 4 = 4 \times 11 \rightarrow$ _____

Section B — Use the Distributive Property to Solve

Break apart the second factor, then multiply each part. Add the products.

7. $7 \times 8 = 7 \times (5 + 3) = (\underline{\quad} \times 5) + (\underline{\quad} \times 3) = \underline{\quad} + \underline{\quad} = \underline{\quad}$

8. $9 \times 6 = 9 \times (5 + 1) = (\underline{\quad} \times 5) + (\underline{\quad} \times 1) = \underline{\quad} + \underline{\quad} = \underline{\quad}$

9. $8 \times 12 = 8 \times (10 + 2) = (\underline{\quad} \times 10) + (\underline{\quad} \times 2) = \underline{\quad} + \underline{\quad} = \underline{\quad}$

10. $6 \times 11 = 6 \times (10 + 1) = (\underline{\quad} \times 10) + (\underline{\quad} \times 1) = \underline{\quad} + \underline{\quad} = \underline{\quad}$

Section C — 2-Digit $\times$ 1-Digit Multiplication

Solve. You may use the distributive property or standard algorithm. Show your work.

11. $24 \times 3 = \underline{\quad}$

14. $52 \times 7 = \underline{\quad}$

12. $31 \times 6 = \underline{\quad}$

15. $63 \times 5 = \underline{\quad}$

13. $45 \times 4 = \underline{\quad}$

16. $78 \times 9 = \underline{\quad}$

Answer Key — Properties of Multiplication

Section A

1. Commutative
2. Associative
3. Zero property
4. Identity property
5. Distributive
6. Commutative

Section B

7. $7 \times 5 = 35$, $7 \times 3 = 21$, $35 + 21 = 56$
8. $9 \times 5 = 45$, $9 \times 1 = 9$, $45 + 9 = 54$
9. $8 \times 10 = 80$, $8 \times 2 = 16$, $80 + 16 = 96$
10. $6 \times 10 = 60$, $6 \times 1 = 6$, $60 + 6 = 66$

Section C

- | | |
|---------|---------|
| 11. 72 | 14. 364 |
| 12. 186 | 15. 315 |
| 13. 180 | 16. 702 |