

Multiplication Properties

The table shows properties that can help you multiply.

| | |
|--|--|
| <p>Identity Property</p> <p>The product of 1 and any number equals that number.</p> | $4 \times 1 = 4$ $1 \times 4 = 4$ |
| <p>Zero Property</p> <p>The product of 0 and any number equals 0.</p> | $0 \times 2 = 0$ $2 \times 0 = 0$ |
| <p>Commutative Property</p> <p>You can multiply two factors in any order and get the same product.</p> | $3 \times 4 = 12$ $4 \times 3 = 12$ |
| <p>Associative Property</p> <p>You can group factors in different ways and get the same product.</p> | $(3 \times 2) \times 4 = 3 \times (2 \times 4)$ $6 \times 4 = 3 \times 8$ $24 = 24$ |
| <p>Distributive Property</p> <p>You can think of one factor as the sum of two addends. Multiply each addend by the other factor and add the products.</p> | $4 \times 6 = 4 \times (1 + 5)$ $= (4 \times 1) + (4 \times 5)$ $= 4 + 20$ $= 24$ |

Find each missing number. Write *Identity*, *Zero*, *Commutative*, *Associative*, or *Distributive* to tell what property of multiplication is shown.

1. $2 \times 7 = \underline{\quad}$ 2. $8 \times 0 = \underline{\quad}$ 3. $1 \times 9 = \underline{\quad}$
 $7 \times 2 = \underline{\quad}$

4. $3 \times 9 = 3 \times (4 + \underline{\quad})$ 5. $2 \times (2 \times 5) = \underline{\quad}$
 $= (3 \times \underline{\quad}) + (3 \times \underline{\quad})$ $(2 \times 2) \times 5 = \underline{\quad}$
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1. $2 \times 7 = \underline{14}$ 2. $8 \times 0 = \underline{0}$ 3. $1 \times 9 = \underline{9}$

$7 \times 2 = \underline{14}$

Commutative

Zero

Identity

4. $3 \times 9 = 3 \times (4 + \underline{5})$

$= (3 \times \underline{4}) + (3 \times \underline{5})$

$= \underline{12} + \underline{15}$

$= \underline{27}$

Distributive

5. $2 \times (2 \times 5) = \underline{20}$

$(2 \times 2) \times 5 = \underline{20}$

Associative

Multiplication Properties

Find the product. Tell which property you used to help you.

1. $8 \times 7 = \underline{\hspace{2cm}}$

2. $1 \times 6 = \underline{\hspace{2cm}}$

3. $(2 \times 3) \times 4 = \underline{\hspace{2cm}}$

4. $7 \times 0 = \underline{\hspace{2cm}}$

5. $5 \times (2 \times 4) = \underline{\hspace{2cm}}$

6. $9 \times 1 = \underline{\hspace{2cm}}$

7. $9 \times 8 = \underline{\hspace{2cm}}$

8. $(2 \times 6) \times 3 = \underline{\hspace{2cm}}$

9. $0 \times 4 = \underline{\hspace{2cm}}$

10. $1 \times 5 = \underline{\hspace{2cm}}$

11. $8 \times 0 = \underline{\hspace{2cm}}$

12. $7 \times 6 = \underline{\hspace{2cm}}$

Write the missing number.

13. $4 \times 3 = \underline{\hspace{1cm}} \times 4$

14. $5 \times 9 = (5 \times 3) + (5 \times \underline{\hspace{1cm}})$

15. $3 \times (2 \times 6) = (3 \times \underline{\hspace{1cm}}) \times 6$

16. $(8 \times 2) \times 4 = \underline{\hspace{1cm}} \times (2 \times 4)$

17. $\underline{\hspace{1cm}} \times 9 = 9 \times 6$

18. $4 \times 7 = (\underline{\hspace{1cm}} \times 5) + (\underline{\hspace{1cm}} \times 2)$

Mixed Review

Solve.

19.
$$\begin{array}{r} \$4.57 \\ + \$7.39 \\ \hline \end{array}$$

20.
$$\begin{array}{r} \$9.03 \\ - \$2.54 \\ \hline \end{array}$$

21.
$$\begin{array}{r} \$26.88 \\ + \$75.42 \\ \hline \end{array}$$

22.
$$\begin{array}{r} \$50.00 \\ - \$24.99 \\ \hline \end{array}$$

Round each number to the nearest thousand.

23. 2,463 _____

24. 8,711 _____

25. 932 _____

26. 4,300 _____

27. 6,514 _____

28. 7,820 _____

Multiplication Properties

Properties may vary.

Find the product. Tell which property you used to help you.

1. $8 \times 7 = \underline{56}$

2. $1 \times 6 = \underline{6}$

3. $(2 \times 3) \times 4 = \underline{24}$

Commutative Property

Identity Property

Associative Property

4. $7 \times 0 = \underline{0}$

5. $5 \times (2 \times 4) = \underline{40}$

6. $9 \times 1 = \underline{9}$

Zero Property

Associative Property

Identity Property

7. $9 \times 8 = \underline{72}$

8. $(2 \times 6) \times 3 = \underline{36}$

9. $0 \times 4 = \underline{0}$

Commutative Property

Associative Property

Zero Property

10. $1 \times 5 = \underline{5}$

11. $8 \times 0 = \underline{0}$

12. $7 \times 6 = \underline{42}$

Identity Property

Zero Property

Commutative Property

Write the missing number.

13. $4 \times 3 = \underline{3} \times 4$

14. $5 \times 9 = (5 \times 3) + (5 \times \underline{6})$

15. $3 \times (2 \times 6) = (3 \times \underline{2}) \times 6$

16. $(8 \times 2) \times 4 = \underline{8} \times (2 \times 4)$

17. $\underline{6} \times 9 = 9 \times 6$

18. $4 \times 7 = (\underline{4} \times 5) + (\underline{4} \times 2)$

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23. 2,463 2,000

24. 8,711 9,000

25. 932 1,000

26. 4,300 4,000

27. 6,514 7,000

28. 7,820 8,000

Property Match Game

Play with a partner.

Materials: Expression cards shown below; scissors

How to Play:

- Cut apart the expression cards and place them facedown on a table.
- Players take turns. Turn over two cards.
Determine whether the cards are an example of a multiplication property. If so, name the property. If not, place the cards back on the table facedown.
- If the property is named correctly, keep the cards. If not, place the cards back on the table facedown.
- When all the cards have been picked up, the player with more cards wins the game!



| | | |
|-------------------------|-------------------------------|-------------------------|
| 5×6 | $(2 \times 2) + (2 \times 7)$ | 7 |
| 2×9 | 0×7 | $8 \times (4 \times 2)$ |
| 9×1 | $(7 \times 2) \times 5$ | $(3 \times 2) \times 4$ |
| 0 | $(4 \times 5) + (4 \times 3)$ | 6×5 |
| $(8 \times 4) \times 2$ | $7 \times (2 \times 5)$ | 7×1 |
| $3 \times (2 \times 4)$ | 1×9 | 4×8 |

Make up your own set of cards. Trade with another pair of classmates, and play again.

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