

# Commutative Associative And Distributive Properties Worksheets

Commutative, Associative, and Distributive Properties -Practice the Skill Twice

Name \_\_\_\_\_ Date \_\_\_\_\_

Identify the Property used in computation.

1	$57 \times (85 + 13) = 57 \times 85 + 57 \times 13$	This is an example of _____ property.
2	$(13 + 84) + 53 = 13 + (84 + 53)$	This is an example of _____ property.
3	$6 \times (19 + 12) = 6 \times 19 + 6 \times 12$	This is an example of _____ property.
4	$41 + 77 = 77 + 41$	This is an example of _____ property.
5	$(10 + 20) + 30 = 10 + (20 + 30)$	This is an example of _____ property.
6	$23 + 42 = 42 + 23$	This is an example of _____ property.
7	$(12 + 55) + 61 = 12 + (55 + 61)$	This is an example of _____ property.
8	$(73 + 32) + 57 = 73 + (32 + 57)$	This is an example of _____ property.
9	$62 \times (94 + 5) = 62 \times 94 + 62 \times 5$	This is an example of _____ property.
10	$81 + 9 = 9 + 81$	This is an example of _____ property.

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 **LIVEWORKSHEETS**

Commutative associative and distributive properties worksheets are essential educational tools designed to help students grasp fundamental mathematical concepts. These properties are critical in simplifying expressions and solving equations, forming the backbone of arithmetic and algebra. Understanding these properties not only reinforces computational skills but also enhances problem-solving abilities. This article delves into the significance of these properties, how they can be taught effectively through worksheets, and various activities that can be incorporated into lessons.

# Understanding the Mathematical Properties

Before we dive into worksheets, it's essential to define the commutative, associative, and distributive properties and explain their significance in mathematics.

## 1. The Commutative Property

The commutative property states that the order of numbers does not affect the sum or product. This property applies to addition and multiplication.

- Commutative Property of Addition: For any numbers  $a$  and  $b$ , the equation  $a + b = b + a$  holds true.
- Commutative Property of Multiplication: For any numbers  $a$  and  $b$ , the equation  $a \times b = b \times a$  holds true.

Example:

- Addition:  $3 + 5 = 5 + 3$
- Multiplication:  $4 \times 6 = 6 \times 4$

This property is particularly useful when simplifying expressions or solving equations, as it allows for flexibility in rearranging terms.

## 2. The Associative Property

The associative property focuses on how numbers are grouped rather than their order. This property also applies to addition and multiplication.

- Associative Property of Addition: For any numbers  $a$ ,  $b$ , and  $c$ ,  $(a + b) + c = a + (b + c)$ .
- Associative Property of Multiplication: For any numbers  $a$ ,  $b$ , and  $c$ ,  $(a \times b) \times c = a \times (b \times c)$ .

Example:

- Addition:  $(2 + 3) + 4 = 2 + (3 + 4)$
- Multiplication:  $(1 \times 2) \times 3 = 1 \times (2 \times 3)$

Understanding the associative property helps students recognize that the way numbers are grouped in operations does not change the outcome.

## 3. The Distributive Property

The distributive property connects addition and multiplication, allowing students to multiply a number by a sum or difference efficiently.

- Distributive Property: For any numbers  $a$ ,  $b$ , and  $c$ ,  $a \times (b + c) = a \times b + a \times c$ .

Example:

$$- 3 \times (4 + 5) = 3 \times 4 + 3 \times 5$$

$$- 2 \times (6 - 2) = 2 \times 6 - 2 \times 2$$

This property is crucial for simplifying expressions and solving equations, especially when dealing with polynomials.

## Creating Effective Worksheets

Worksheets are an excellent way to reinforce the understanding of the commutative, associative, and distributive properties. Here are some tips for creating effective worksheets:

### 1. Clear Objectives

Each worksheet should have a clear objective. For example, the goal could be to practice identifying and applying each of the properties in various mathematical scenarios.

### 2. Varied Difficulty Levels

To cater to different learning abilities, include problems of varying difficulty:

- Beginner Level: Simple problems that require basic application of properties.
- Intermediate Level: Problems that require multiple steps or a combination of properties.
- Advanced Level: Word problems or real-life scenarios that necessitate the use of these properties.

### 3. Interactive Elements

Incorporate interactive elements to engage students. This could include:

- Fill-in-the-blank problems where students complete equations using the properties.
- Matching activities where students match equations to their corresponding property.
- Group activities that encourage collaboration and discussion about the properties.

### 4. Visual Aids

Visual aids can enhance understanding. Consider including diagrams or flowcharts that illustrate how the properties work. For example, a flowchart demonstrating the steps involved in applying the distributive property can clarify the concept for visual learners.

## 5. Real-World Applications

Include problems that connect the properties to real-world situations. For example:

- Use shopping scenarios to illustrate the distributive property (e.g., calculating total costs).
- Use sports statistics to show the commutative and associative properties in action.

## Sample Worksheet Activities

Here are a few sample activities that can be included in worksheets to assess understanding of the mathematical properties:

### 1. Property Identification

Create a list of equations and ask students to identify which property is being used:

- a.  $7 + 3 = 3 + 7$
- b.  $(2 + 5) + 1 = 2 + (5 + 1)$
- c.  $4 \times (3 + 2) = 4 \times 3 + 4 \times 2$

Answer Key:

- a. Commutative Property of Addition
- b. Associative Property of Addition
- c. Distributive Property

### 2. True or False

List statements related to the properties and have students determine if they are true or false:

- a.  $5 \times 2 = 2 \times 5$  (True)
- b.  $(3 + 3) + 2 = 3 + (3 + 2)$  (True)
- c.  $6 \times (4 - 2) = 6 \times 4 - 6 \times 2$  (False)

### 3. Solving Equations

Provide equations that require students to apply the properties to solve:

- a. Simplify:  $3 \times (4 + 5)$
- b. Simplify:  $(2 + 3) + 6$
- c. Simplify:  $5 \times (2 + 3) - 5 \times 2$

Answer Key:

- a. 27 (Distributive Property)
- b. 11 (Associative Property)
- c. 15 (Distributive Property)

## 4. Word Problems

Frame word problems that require the use of properties to solve:

- A gardener is planting flowers in rows. If he plants 5 flowers in each of 4 rows, how many flowers does he have in total? (Use the distributive property).
- If a box contains 8 apples and you add 4 more boxes with the same number of apples, how many apples are there altogether? (Use the associative property).

Answer Key:

- 20 flowers ( $5 \times 4$  using the Distributive Property)
- 40 apples ( $8 + 8 + 8 + 8 + 8 = 8 \times 5$  using the Associative Property)

## Conclusion

Incorporating commutative associative and distributive properties worksheets into the curriculum provides students with vital skills necessary for advanced mathematics. Understanding these properties not only improves computational fluency but also fosters critical thinking and problem-solving abilities. By creating engaging, varied, and practical worksheets, educators can help students appreciate the beauty and utility of these fundamental mathematical concepts. As students master these properties, they build a solid foundation for future learning in mathematics, paving the way for more complex topics and real-life applications.

## Frequently Asked Questions

### What are commutative, associative, and distributive properties in mathematics?

The commutative property states that changing the order of numbers does not change the sum or product (e.g.,  $a + b = b + a$ ,  $a \times b = b \times a$ ). The associative property means that the way numbers are grouped does not change their sum or product (e.g.,  $(a + b) + c = a + (b + c)$ ,  $(a \times b) \times c = a \times (b \times c)$ ). The distributive property shows how multiplication distributes over addition (e.g.,  $a \times (b + c) = a \times b + a \times c$ ).

### How do worksheets on these properties help students?

Worksheets on commutative, associative, and distributive properties provide students with practice in applying these fundamental concepts, helping to reinforce their understanding

and improve their problem-solving skills in various mathematical contexts.

## **What grade levels typically use worksheets focused on these properties?**

Worksheets focusing on commutative, associative, and distributive properties are commonly used in elementary and middle school, particularly in grades 2 to 6, where foundational arithmetic concepts are taught.

## **Can you find online resources for commutative, associative, and distributive properties worksheets?**

Yes, there are many online resources, including educational websites and platforms like Teachers Pay Teachers, that offer free and paid worksheets on these properties, often with interactive elements to engage students.

## **What types of exercises are commonly included in these worksheets?**

Common exercises in worksheets for these properties include solving equations, simplifying expressions, identifying and correcting errors in mathematical statements, and applying properties to real-world problems.

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## **Commutative Associative And Distributive Properties Worksheets**

### **Flora**

A DESTINATION Flora is a boutique cafe located inside the lush Greater Des Moines Botanical Gardens. We offer seasonal cuisine inspired by local gardens and farms. Join us for lunch, ...

### Dining - Greater Des Moines Botanical Garden - NEW

Flora is the new dining spot at the Greater Des Moines Botanical Garden that you'll want to visit. Enjoy plant-forward dishes and drinks.

*Flora from Suman Hoque opens at the Greater Des Moines ...*

Dec 18, 2024 · Much like his signature restaurant HoQ, Hoque said the menu at Flora will continually change, with a focus on farm-to-table fare, as well as locally sourced meat, ...

### *Flora Cafe - Facebook*

Celebrate Summer evenings at Flora in the café, bar, and patio. Enjoy handcrafted cocktails and mocktails (\$8-\$10), beer and wine (\$5-\$8), and a menu of shareable appetizers (\$5-\$10) from ...

## Flora - HOQ

Home Our Story Local Farmers Menus Private Events Order Online E-Gift Card Easter Brunch HoQ Breakfast Wraps & HoQ HoT Sauce HoQtail Flora

### *Botanical garden's makes space for new Flora - dsm magazine*

Oct 21, 2024 · Initially, Flora will open for lunch Wednesdays through Fridays, but plans are in the works to offer weekday happy hours and weekend brunches, with a full bar available.

### *HoQ owners to open Flora at Greater Des Moines Botanical Garden*

6 days ago · Flora is expected to open in December. According to a news release, the menu will feature a similar farm-to-table concept as HoQ. The restaurant will be open from 11 a.m. to 2 ...

## **Flora Cafe at the Greater Des Moines Botanical Garden**

Flora is expected to open in the former Trellis Café space in the Greater Des Moines Botanical Garden December 2024. Find out more in the press release here. Photo: Des Moines Register

## Menu 1 — Flora

Flora Plate HoQ hummus, vegetables, and Naan (add tin fish, cheese or prosciutto options)

## **"Flora" Opens at the Botanical Garden December 18**

"We've been working hard to prepare the space, menu and staff to open Flora," said Hoque. "The Botanical Garden offers such a respite for the Des Moines area, and we're eager to open our ...

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## **Lake Spaulding - Campsite Photos, Reservations and Campground ...**

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## **Spaulding Lake Campground | Michigan**

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### *Spaulding Lake Campground - Niles, Michigan - RV LIFE Campground Reviews*

Spaulding Lake Campground in Niles, Michigan: 56 reviews, 35 photos, & 15 tips from fellow RVers. Spaulding Lake Campground in Niles is rated 8.2 of 10 at RV LIFE Campground Reviews.

### *Spaulding Lake Campground Reviews updated 2025*

Sep 5, 2015 · Most campgrounds put RVs on almost the whole property, with maybe a small plot of land reserved for a playground or dog run. Spaulding Lake had huge grassy fields, a small ...

### *Guide: Camping at Lake Spaulding Campground | Sierra Outdoors*

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### Spaulding Lake Campground - Niles, Michigan campgrounds

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Boost your math skills with our comprehensive commutative

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