

REVIEW: Commutative and Associative Properties

Name _____

Key Concept and Vocabulary

Commutative Property

$$1 + 3 = 3 + 1 \quad (\text{Addition})$$

$$2 + (3 + 5) = (2 + 3) + 5 \quad (\text{Addition})$$

Associative Property

Commutative Property

$$2 \cdot 5 = 5 \cdot 2 \quad (\text{Multiplication})$$

$$2 \cdot (3 \cdot 5) = (2 \cdot 3) \cdot 5 \quad (\text{Multiplication})$$

Associative Property



Skill Examples

- $3 + 6 = 6 + 3$
- $15 + (5 + 3) = (15 + 5) + 3$
- $4 \cdot 6 = 6 \cdot 4$
- $2 \cdot (3 \cdot 5) = (2 \cdot 3) \cdot 5$

Application Example

- Use the above properties and mental math to find the sum: $97 + 28 + 3 + 2$.

$$\begin{aligned} 97 + 28 + 3 + 2 &= (97 + 3) + (28 + 2) \\ &= 100 + 30 \\ &= 130 \end{aligned}$$



The sum is 130.

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Check your answers at BigIdeasMath.com.

Identify the property. Then find the sum or product.

- $11 + 36 = 36 + 11$ Commutative; 47
- $10 \cdot 4 = 4 \cdot 10$ Commutative; 40
- $5 \cdot (4 \cdot 2) = (5 \cdot 4) \cdot 2$ Associative; 40
- $2 + (3 + 5) = (2 + 3) + 5$ Associative; 10
- $2 + 3 + 4 = 2 + 4 + 3$ Commutative; 9
- $5 \cdot 2 \cdot 3 = 2 \cdot 5 \cdot 3$ Commutative; 30

Show how you can use the Commutative and Associative Properties to find the sum or product using mental math.

- $34 + 47 + 16 = \underline{(34 + 16) + 47}$
 $\underline{= 50 + 47}$
 $\underline{= 97}$
- $5 \cdot 13 \cdot 2 = \underline{(5 \cdot 2) \cdot 13}$
 $\underline{= 10 \cdot 13}$
 $\underline{= 130}$
- $15 + 13 + 27 + 35 = \underline{(15 + 35) + (13 + 27)}$
 $\underline{= 50 + 40}$
 $\underline{= 90}$
- $9 \cdot 5 \cdot 3 \cdot 2 = \underline{(9 \cdot 3) \cdot (5 \cdot 2)}$
 $\underline{= 27 \cdot 10}$
 $\underline{= 270}$

- COMMUTATIVITY** Describe two real-life activities that are *not* commutative. In other words, you get different results if you switch the order in which the activities are performed.

Sample answer: Put on a shirt and jacket; Fill and seal an envelope.