Commutative and Associative Properties
Topic 2 Homework

Name _____

Period _____

Commutative Property

Write an equivalent expression using the Commutative property.

$5+6$

$7(12)$

ab

$2x+4y+8z$

Associative Property

Write an equivalent expression using the Associative property.

$7+(5+9)$

$x \bullet (p \bullet m) \bullet k$

Simplify each Expression

1)	$2m+3m+8+10$	2)	$2 \bullet 4 \bullet 3 \bullet c \bullet c \bullet c$
3)	$8x+5y+3y-6x$	4)	$a+b+b+a+b$

5)	$6+3d+9d+5-7$	6)	$4 \bullet p \bullet n \bullet 2 \bullet n \bullet n \bullet p$

7. **Error Analysis** A class must use the Associative Property of Addition to write an expression equivalent to 38 + (18 + 14). One student incorrectly comes up with the expression 38 + (14 + 18).

   a) Use the Associative Property of Addition to write an expression equivalent to 38 + (18 + 14).

   _____

   b) What was the student's error?

8. Juan is planning to paint a room. He spends $33 on brushes, $80 on paint, and $20 on a drop cloth.

   a) Use the Associative Property of Addition to write two equivalent expressions that show the total cost.

   b) How can using the Associative Property of Addition make it easier to find the total cost?

   - ○ A. Grouping 33 and 20 makes finding the total easier because they are the least numbers in the expression.
   - ○ B. Grouping 80 and 20 makes finding the total easier because their sum is 100.
   - ○ C. Grouping 33 and 80 makes finding the total easier because they are the greatest numbers in the expression.

   c) Find the total cost.

Commutative and Associative Properties
Topic 2 Homework

Name Key

Period _____

Commutative Property

Write an equivalent expression using the Commutative property.

$5+6$

$6+5$

$7(12)$ $12(7)$

ab

$b \cdot a$

$2x+4y+8z$

$4y+2x+8z$

Associative Property

Write an equivalent expression using the Associative property.

$7+(5+9)$

$(7+5)+9$

$x \bullet (p \bullet m) \bullet k$

$x \cdot p \cdot (m \cdot k)$

Simplify each Expression

1)	$2m+3m+8+10$ $5m+18$	2)	$2 \bullet 4 \bullet 3 \bullet c \bullet c \bullet c$ $24 \cdot c^3$
3)	$8x+5y+3y-6x$ $8x-6x+5y+3y$ $2x+8y$	4)	$a+b+b+a+b$ $a+a+b+b+b$ $2a+3b$

5)	$6+3d+9d+5-7$ $3d+9d+6+5-7$ $12d+4$	6)	$4 \bullet p \bullet n \bullet 2 \bullet n \bullet n \bullet p$ $4 \cdot 2 \cdot p \cdot p \cdot n \cdot n \cdot n$ $8 \cdot p^2 \cdot n^3$

7. **Error Analysis** A class must use the Associative Property of Addition to write an expression equivalent to 38 + (18 + 14). One student incorrectly comes up with the expression 38 + (14 + 18).

a) Use the Associative Property of Addition to write an expression equivalent to 38 + (18 + 14).

$(38+18)+14$

b) What was the student's error?

The student changed the order of the numbers. The student needed to change the grouping instead.

8. Juan is planning to paint a room. He spends $33 on brushes, $80 on paint, and $20 on a drop cloth.

a) Use the Associative Property of Addition to write two equivalent expressions that show the total cost.

$(33+80)+20$ and $33+(80+20)$

b) How can using the Associative Property of Addition make it easier to find the total cost?

- ○ A. Grouping 33 and 20 makes finding the total easier because they are the least numbers in the expression.
- ● B. Grouping 80 and 20 makes finding the total easier because their sum is 100.
- ○ C. Grouping 33 and 80 makes finding the total easier because they are the greatest numbers in the expression.

c) Find the total cost.

$33+(80+20)$

$33+100$

$133