

ASSOCIATIVE PROPERTY
ADDITION and MULTIPLICATION

ANSWERS



THE ASSOCIATIVE PROPERTY TELLS US WE CAN CHANGE THE GROUPING OF A PROBLEM AND THE ANSWER WILL STAY THE SAME.

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IN OTHER WORDS, THE ORDER DOES NOT MATTER, BUT THIS ONLY WORKS FOR **MULTIPLICATION** AND **ADDITION**.

HELPFUL EXAMPLE

$$\begin{aligned} 3 + (7 + 6) \\ = 3 + 13 \\ = 16 \end{aligned}$$

SAME AS

$$\begin{aligned} (3 + 7) + 6 \\ = 10 + 6 \\ = 16 \end{aligned}$$

WE USE PARENTHESIS () TO GROUP NUMBERS IN MATHEMATICS.

DO YOU SEE HOW WE STILL GET THE SAME ANSWER EVEN THOUGH WE CHANGED THE GROUPING?



$$3 + (7 + 6) = (3 + 7) + 6$$

Regroup and simplify. Make sure you **SHOW YOUR WORK**.

THESE PROBLEMS ONLY HAVE ADDITION.

a. $(n + 8) + 2$
 $= n + (8 + 2)$
 $= n + 10$

1. $28 + (12 + 19)$
59

2. $(2d + c) + (d + 3c)$
 $3d + 4c$

3. $(65 + 29) + 15$
109

4. $6k + (2w + 3k)$
 $9k + 2w$

5. $(7f + 5b) + (4b + 3f)$
 $10f + 9b$



WE'VE TAKEN A LOOK AT THE ASSOCIATIVE PROPERTY OF ADDITION. NOW LET'S LOOK AT THE ASSOCIATIVE PROPERTY OF MULTIPLICATION.

AGAIN, BY MOVING THE PARENTHESIS AROUND WE CAN RE-GROUP TO SIMPLIFY A PROBLEM OR EVEN MAKE IT EASIER TO SOLVE.



HELPFUL EXAMPLE

$$\begin{aligned} 5 \cdot (4 \cdot 7) \\ = 5 \cdot 28 \\ = 140 \end{aligned}$$

SAME AS

$$\begin{aligned} (5 \cdot 4) \cdot 7 \\ = 20 \cdot 7 \\ = 140 \end{aligned}$$

THE "•" MEANS MULTIPLY OR TIMES.

THESE PROBLEMS ONLY HAVE MULTIPLICATION. DON'T FORGET, $2n$ OR $2 \cdot n$ OR $2(n)$ IS THE SAME AS $2 \times n$.

$$5 \times (4 \times 7) = (5 \times 4) \times 7$$

Regroup and simplify. Make sure you **SHOW YOUR WORK**.

b. $(8 \cdot w) \cdot 9$
 $= (8 \cdot 9) \cdot w$
 $= 72w$

1. $5 \times (6 \times 11)$
330

2. $8(2h \cdot 9)$
144h

3. $(2r \cdot 12)(3 \cdot 5)$
360r

4. $(4 \times 7) \times (25 \times 3)$
2,100

5. $(2t \cdot 17) \cdot 5$
170t