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.

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

HELPFUL EXAMPLE

WE USE PARENTHESIS ( ) TO GROUP NUMBERS IN MATHEMATICS.

$3 + (7 + 6)$ $= 3 + 13$ $= 16$	SAME AS	$(3 + 7) + 6$ $= 10 + 6$ $= 16$

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

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

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

THE " • " MEANS MULTIPLY OR TIMES.

$5 \cdot (4 \cdot 7)$ $= 5 \cdot 28$ $= 140$	SAME AS	$(5 \cdot 4) \cdot 7$ $= 20 \cdot 7$ $= 140$

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

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

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