

WORKSHEET 1.3: SIMPLIFYING EXPRESSIONS WITH NESTED GROUPING SYMBOLS

Sometimes an expression has one or more grouping symbols inside another. These are often called “nested” grouping symbols. Follow the steps below when simplifying expressions with nested grouping symbols:

1. Simplify the expressions within the nested grouping symbols first.
2. After simplifying the innermost expression, work outward.
3. Simplify the expression according to the order of operations. Multiply and divide from left to right. Then add and subtract from left to right.

EXAMPLES

$20 - [3 \times (14 - 12)] =$	$4[(6 + 3) \times 10] =$	$\frac{3 + 24}{12 - [10 - 7]} =$
$20 - [3 \times 2] =$	$4(9 \times 10) =$	$\frac{3 + 24}{12 - 3} =$
$20 - 6 =$	$4(90) =$	$\frac{27}{9} =$
14	360	3

DIRECTIONS: Simplify.

1. $4[9 - (5 - 2)]$
2. $2[4 + 7(4 - 3)]$
3. $2[3(12 - 7) \times 4]$
4. $4[8(6 - 3) - 4]$
5. $3 + 2[4(3 + 8)]$
6. $(3 + 2)[4(3 + 8)]$
7. $\frac{2(3 + 7)}{3 + 2}$
8. $\frac{6 \times 8}{2(3 + 5)}$



CHALLENGE: What is the missing number? $6 + [___ (3 + 3(8 + 1))] = 126$

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14	360	3

DIRECTIONS: Simplify.

1. $4[9 - (5 - 2)]$

24

2. $2[4 + 7(4 - 3)]$

22

3. $2[3(12 - 7) \times 4]$

120

4. $4[8(6 - 3) - 4]$

80

5. $3 + 2[4(3 + 8)]$

91

6. $(3 + 2)[4(3 + 8)]$

220

7. $\frac{2(3 + 7)}{3 + 2}$

4

8. $\frac{6 \times 8}{2(3 + 5)}$

3



CHALLENGE: What is the missing number? $6 + [___ (3 + 3(8 + 1))] = 126$

4 is the missing number.