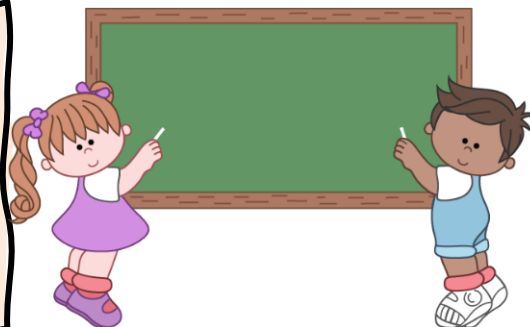# Simplifying Numerical Expressions (Order of Operations)   Exit Quiz

<mark>Answers:</mark>

1. Tom and Jenny were asked to simplify the same numerical expressions on the board:

$$8(4 + 5) \div 12 - (-6)$$

Examine their solutions and answer the questions that follow.

Tom's Solution	Jenny's Solution
$8(4 + 5) \div 12 - (-6)$	$8(4 + 5) \div 12 - (-6)$
$8(9) \div 12 - (-6)$	$8(9) \div 12 - (-6)$
$72 \div 12 - (-6)$	$72 \div 12 - (-6)$
$6 - (-6)$	$72 \div 18$
12	4

a. Compare how Tom and Jenny simplified the expressions by writing the order of the operations used, as shown in each of their solutions.

Tom's Solution

ORDER OF OPERATIONS

<mark>Addition (inside the parentheses)</mark>

<mark>Multiplication</mark>

<mark>Division</mark>

<mark>Subtraction</mark>

Jenny's Solution

ORDER OF OPERATIONS

<mark>Addition (inside the parentheses)</mark>

<mark>Multiplication</mark>

<mark>Subtraction</mark>

<mark>Division</mark>

b. Who do you think gave the correct solution? Justify your answer.
   Answer: <mark>Tom gave the correct solution because he followed the correct order of operations.</mark>

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Simplifying Numerical Expressions (Order of Operations) Exit Quiz

2. Simplify the following numerical expressions.

a. $(5 - 10)^2[3^2(12 \div 3) - (4^2)]$

$$(-5)^2[3^2(12 \div 3) - (4^2)]$$
$$25[9(12 \div 3) - 16]$$
$$25[9(4) - 16]$$
$$25[36 - 16]$$
$$25[20]$$
$$\boxed{500}$$

b. $-2[16 \div (-2)^2] - 2[(-64 \div 16) + 5]^2$

$$-2[16 \div 4] - 2[(-64 \div 16) + 5]^2$$
$$-2[4] - 2[(-64 \div 16) + 5]^2$$
$$2[4] - 2[(-4) + 5]^2$$
$$2[4] - 2[1]^2$$
$$8 - 2[1]$$
$$8 - 2$$
$$\boxed{6}$$

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