

PreAlgebra Skill-Builder #D-11

Performing Combined Operations in Decimals

Follow the order of operations **PEMDAS**:

Parentheses (includes any grouping symbols like parentheses $()$, brackets $[]$, absolute values $| |$, etc)
When there is more than one set of grouping symbols, simplify from innermost and work outwards.

Exponents

Multiplication/Division (simplify from left to right, whichever comes first)

Addition/Subtraction (simplify from left to right, whichever comes first)

Example 1:

Simplify:

$$\frac{-3 \cdot 0.21}{\quad} + \frac{1.2 \div (-0.06)}{\quad}$$

Perform multiplication and division first

$$= -0.63 - 20$$
$$= \boxed{-20.63} \quad \textbf{Answer}$$

Example 2:

Simplify: $3.1 - 1.3 (-32 \div 0.4^2 \cdot 100)$ We have to work within the parentheses first

Perform exponentiation within parentheses

$$= 3.1 - 1.3 (-32 \div 0.16 \cdot 100)$$

Division then multiplication, left to right as they appear

$$= 3.1 - 1.3 (-200 \cdot 100)$$

Continue to simplify within the parentheses

$$= 3.1 - 1.3 (-20,000)$$

Multiply first, then subtract

$$= 3.1 + 26,000$$

$\boxed{26,003.1}$ **Answer**

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Simplify the following:

1. $5.2 - 85.2 (-0.3)^2$

2. $\frac{3.2 + 4.72}{0.2 - 2}$

3. $(3.1)^2 - [4.1 - (7.29 - 10)]$

4. $23.4 \div 0.03 (4.2 - 1.2)^2$

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Answers

1. -2.468
2. -4.4
3. 2.8
4. $7,020$

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