Simplifying Expressions

When an expression contains more than one operation, **parentheses ( )** can be used to show which computation should be done. Parentheses are one type of **grouping symbol**.

Do the computation inside the parentheses first.

Evaluate **(2 + 8)** × 3.

$$10 \times 3 = 30$$

Evaluate 2 + **(8 × 3)**.

$$2 + 24 = 26$$

Some expressions contain more than one set of parentheses.

Do the computation inside each pair of parentheses first.

Evaluate (4 + 9) − (30 ÷ 5).

$$13 - 6 = 7$$

After you solve the computations inside the parentheses, use the order of operations to choose which computation to solve next:

Exponents

Multiplication and division from left to right

Addition and subtraction from left to right

1. (16 + 4) ÷ 10

2. (16 ÷ 4) + (10 − 3)

3. $8^2 \div (2 \times 4)$

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4. 27 − (5 × 3)

5. (4 × 6) ÷ 6 + 6

6. $(36 \div 6) \times 2^2$

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7. Evaluate 11 × (8 − n) for n = 4. _____

Simplifying Expressions

1. $(18 \div 9) + 7$ **2.** $(4 + 3) \times (9 - 2)$ **3.** $32 \div (8 + 8)$

_____   _____   _____

4. $(26 - 17) \times (9 \div 3)$ **5.** $64 \div (5 + 1 + 2)$ **6.** $27 \div (3 \times 3) + 7$

_____   _____   _____

Rewrite with parentheses to make each sentence true.

7. $42 + 12 \div 6 = 44$ _____

8. $33 - 14 + 4 = 15$ _____

9. $32 \div 8 \times 2 = 8$ _____

Evaluate each expression for $w = 9$.

10. $72 \div (w + 0)$ **11.** $(12 + w) \div 3$ **12.** $(0 + w) \times 2$

_____   _____   _____

13. Write an expression to show how much Gretchen paid for drama, action, and comedy videos if she paid $4 each at a sale.

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Gretchen's Video Purchases	
Mystery	6
Action	3
Comedy	5
Drama	2
Romance	2

14. Which statement is true when $x = 7$?

A $63 \div x = 21$ **C** $0 \div x = 7$

B $(x - 6) - (1 \times 1) = 1$ **D** $(2 + 7) \times (12 - x) = 45$

15. Evaluate the expression $7 + (32 \div 16) \times 4 - 6$. What steps did you use to find the answer?

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