

Unit 4: Equations and Expressions

ADVANCED · SET 2

Name: _____ Date: _____

Solve each problem and write your exact answer in the blank. Show all steps on separate paper; simplify fractions and evaluate exponents fully.

1. Evaluate the expression $3 \times 2^4 - 5 \times (7 - 4) + 2^3$.

Answer: _____

3. Solve for x: $x/6 + 9 = 23$.

Answer: _____

5. A rectangle has area 96 square units. Its width is $3/4$ of a number w and its length is 16. If area = length $\times$ width, and width = $(3/4) \cdot w$, find w .

Answer: _____

7. Solve for x: $4(x - 5) + 3x = 2(x + 10) - 5$.

Answer: _____

9. Evaluate $4^3 - \sqrt{81} + 2^5 \div 8$.

Answer: _____

11. Maria buys 3 notebooks that each cost n dollars and a pen for \$2.50. She spends \$17.50 total. Write the equation $3n + 2.50 = 17.50$ and solve for the cost of one notebook n (in dollars).

Answer: _____

2. Solve for x: $7x - 12 = 4x + 27$.

Answer: _____

4. Write an equivalent expression by combining like terms and distributing: $5(2x + 3) - 3(x - 4)$. Give the result in the form $ax + b$ (write it as, e.g., $7x+22$).

Answer: _____

6. Evaluate: $(2/3)^3 \times 9$. Give your answer as a fraction in lowest terms or a whole number.

Answer: _____

8. The perimeter of a rectangle is 74 cm. The length is 5 cm more than twice the width w . Write the equation $2(2w + 5) + 2w = 74$ and solve for the width w (in cm).

Answer: _____

10. Solve for y: $(2y - 3)/5 = 7$.

Answer: _____

12. Simplify the expression to the form $ax + b$: $8x - 2(3x - 7) + 4(x - 1)$. Write it as, e.g., $6x+10$.

Answer: _____