

6th Grade Expressions & Equations

Student Name _____

Date _____

Score _____

Section 1: Evaluate Expressions

Evaluate the following expressions for the given value of the variable.

1) $3x + 5$ for $x = 4$

2) $10 - y$ for $y = 3$

3) $2(n + 6)$ for $n = 5$

4) $a^2 - 4$ for $a = 6$

5) $(8 + z) \div 2$ for $z = 10$

6) $5(p - 2)$ for $p = 7$

7) $\frac{b}{3} + 9$ for $b = 15$

8) $2c + 3(1) - 4$ for $c = 2$

Section 2: Order of Operations

Simplify each numerical expression using the correct order of operations (PEMDAS).

9) $12 + (8 \div 2) \times 3$

10) $(15 - 5) + 6 \times 2$

11) $24 \div (3 + 1) - 2$

12) $10 + 2 \times (7 - 3)$

13) $50 - 4 \times 10 \div 2$

14) $(9 \times 4) \div (2 + 1)$

15) $18 - (6 + 4) + 5$

16) $12 \times 3 + 24 \div 6$

Section 3: One-Step Equations

Solve each one-step equation. Show your work on the space provided.

17) $x + 7 = 15$

18) $y - 9 = 4$

19) $5z = 30$

20) $\frac{a}{4} = 8$

21) $12 + m = 25$

22) $p - 6 = 18$

23) $7n = 56$

24) $\frac{q}{5} = 10$

Section 4: Write Expressions

Translate the verbal phrase into an algebraic expression. Use a variable for unknown numbers.

25) Three less than a number t

26) The product of eight and a number k

27) A number p increased by ten

28) Twelve divided by a number n

29) The difference of seven and a number s

30) Two more than five times a number m

Identify the variable and the constant in the following expression: $4x + 9$

Variable: _____ Constant: _____

6th Grade Expressions & Equations — ANSWER KEY

Section 1: Evaluate Expressions

Correct evaluations for given variable values.

1) $3(4) + 5 = 12 + 5 = \underline{17}$

2) $10 - 3 = \underline{7}$

3) $2(5 + 6) = 2(11) = \underline{22}$

4) $(6)^2 - 4 = 36 - 4 = \underline{32}$

5) $(8 + 10) \div 2 = 18 \div 2 = \underline{9}$

6) $5(7 - 2) = 5(5) = \underline{25}$

7) $(15 \div 3) + 9 = 5 + 9 = \underline{14}$

8) $2(2) + 3 - 4 = 4 + 3 - 4 = \underline{3}$

Section 2: Order of Operations

Simplifications following PEMDAS.

9) $12 + 4 \times 3 = 12 + 12 = \underline{24}$

10) $10 + 6 \times 2 = 10 + 12 = \underline{22}$

11) $24 \div 4 - 2 = 6 - 2 = \underline{4}$

12) $10 + 2 \times 4 = 10 + 8 = \underline{18}$

13) $50 - 40 \div 2 = 50 - 20 = \underline{30}$

14) $36 \div 3 = \underline{12}$

15) $18 - 10 + 5 = 8 + 5 = \underline{13}$

16) $36 + 4 = \underline{40}$

Section 3: One-Step Equations

Solutions for individual variables.

17) $x = \underline{8}$

18) $y = \underline{13}$

19) $z = \underline{6}$

20) $a = \underline{32}$

21) $m = \underline{13}$

22) $p = \underline{24}$

23) $n = \underline{8}$

24) $q = \underline{50}$

Section 4: Write Expressions

Translated algebraic expressions.

25) $\underline{t - 3}$

26) $\underline{8k}$

27) $\underline{p + 10}$

28) $\underline{12 \div n}$ or $\frac{12}{n}$

29) $\underline{7 - s}$

30) $\underline{5m + 2}$

Identify the variable and the constant in the following expression: $4x + 9$

Variable: $\underline{x}$ Constant: $\underline{9}$