

Practice Worksheet: Algebraic Expressions and Identities

Section A: Multiple Choice

1. What is the value of x in the equation $2x + 5 = 11$?

- A. 2
- B) B. 3
- C) C. 4
- D) D. 5

2. What is the value of y in the equation $y - 3 = 7$?

- A. 4
- B) B. 5
- C) C. 10
- D) D. 11

3. What is the value of z in the equation $z + 2 = 9$?

- A. 7
- B) B. 8
- C) C. 9
- D) D. 10

4. What is the value of a in the equation $3a = 12$?

- A. 2
- B) B. 3
- C) C. 4
- D) D. 6

5. What is the value of b in the equation $b - 1 = 6$?

- A. 5
- B) B. 6
- C) C. 7
- D) D. 8

Section B: Short Answer

1. Simplify the expression $2x + 3x$
2. Solve the equation $x - 2 = 7$
3. Simplify the expression $5y - 2y$
4. Solve the equation $3z = 15$
5. Simplify the expression $2a - 3a$

Section C: Application Problems

1. Tom has been saving money for a new bike and has \$120 in his piggy bank. He wants to buy a bike that costs \$180. How much more money does Tom need to save?
2. A book costs \$25. If a 10% discount is applied, how much will the book cost?
3. A bakery sells a total of 250 loaves of bread per day. They sell a combination of whole wheat and white bread. If they sell 30 more whole wheat loaves than white bread loaves, how many whole wheat loaves do they sell per day?
4. A group of friends want to share some candy equally. If they have 48 pieces of candy and there are 8 friends, how many pieces of candy will each friend get?
5. A water tank can hold 1200 liters of water. If 300 liters of water are already in the tank, what percentage of the tank is filled?

Answer Key

1: $5x$

2: 9

3: $3y$

4: 5

5: $-a$

6: 120

7: 22.50

8: 38

9: 6

10: 25%