

# Learnzy Academy

## Worksheet: Algebraic Expressions and Identities

1. Simplify:  $(x + y)^2 + (y + z)^2 + (z + x)^2 - (x^2 + y^2 + z^2)$
2. If  $m = 5$ , find the value of  $m - 2$ .
3. If  $p = 5$ , what is  $3p + 2$ ?
4. What must be added to the sum of  $(x^2 - 4x + 7)$  and  $(2x^2 + 5x - 9)$  to get 0?
5. What is the coefficient of 'ab' in the term 'ab'?
6. Combine like terms:  $2a + 3b + 5a$
7. In  $5 + 3y$ , which is the constant?
8. Simplify:  $7x - 2y + 5x$
9. Which of the following terms is like  $9m$ ?
10. Using identities, evaluate  $8.56 \times 11.60$
11. Which of the following is not a term in the expression  $3x + 4y - 5$ ?
12. Factorize completely:  $a^4 - 4a^2b^2 + 4b^4$
13. Evaluate  $5z - 1$  when  $z = 3$ .
14. Write an expression for "one-fourth of a number  $n$ ".
15. Add:  $8x^2 + 7xy - 6y^2$ ,  $4x^2 - 3xy + 2y^2$  and  $-4x^2 + xy - y^2$
16. Simplify:  $10x - 3x + x$
17. Subtract:  $(4x + 5)$  from  $(-3x + 7)$
18. If  $a = 2$ , what is  $a + a + a$ ?
19. If  $x = 1$  and  $y = 2$ , what is the value of  $x + y$ ?
20. Identify the terms in the expression  $2x + 5y - 8$ .