Year 9 Algebraic Expressions – Mixed Practice

HappyKids.fit

Year 9 · Maths · Expanding, Index Laws and Algebraic Fractions · Mixed practice · 30 questions

Name _____ **Date** _____

A. Mixed practice (mixed order)

1. Expand and simplify $(a - 1)(2a - 2)$.

Answer _____

2. Simplify $30a^3 \div 5a - 8a^2$.

Answer _____

3. Expand and simplify $(m - 3)(m - 8)$.

Answer _____

4. Work out the value of $\sqrt{(a^2 + b^2)}$ when $a = 12$ and $b = 5$.

Answer _____

5. Write an expression for this: add 5 to n, then square the result.

Answer _____

6. Simplify $36m^6 \div 6m^4$.

Answer _____

7. Simplify $(5n - 45)/(n - 9)$.

Answer _____

8. Simplify $6(x^2 + 8) - 9x^2$.

Answer _____

9. Amir says $(x + 5)^2 = x^2 + 25$. Explain the mistake and write the correct answer.

Answer _____

10. Show that $(x + 4)(x - 4) + 16$ simplifies to x^2.

Answer _____

11. Expand and simplify $(n + 6)(2n - 6)$.

Answer _____

12. Work out the value of $3x^2 - 2x$ when $x = -3$.

Answer _____

13. Eli says $(2x)^3 = 8x^3$. Is Eli right? Explain.

Answer _____

14. Factorise, then simplify $(y^2 + 7y)/(5y + 35)$.

Answer _____

15. Write an expression for this: find the square root of n, then add 3.

Answer _____

16. A rectangular pond is x m wide and 1 m longer than it is wide. A path 8 m wide runs along one long side and one short side, making a bigger rectangle. Write an expanded expression for the area of this bigger rectangle in m^2.

Answer _____

17. Simplify $5m^3 \times 3m^5$.

Answer _____

18. Simplify $(3n^6)/(12n^3)$.

Answer _____

19. Bella simplifies $8x - 3(x - 7)$ to $5x - 21$. Explain the mistake and write the correct answer.

Answer _____

20. Simplify $5m^3n^4 \times 5m^3n^2$.

Answer _____

21. A square tile has sides of $(2x - 5)$ cm. Write an expanded expression for its area in cm^2.

Answer _____

22. Work out the value of $(2x - 1)^2$ when $x = -2$.

Answer _____

23. Show that $(x + 3)^2 - (x - 3)^2$ simplifies to $12x$.

Answer _____

24. Expand and simplify $(2t + 2)(5t + 2)$.

Answer _____

25. Factorise, then simplify $(3y + 6)/(10y + 20)$.

Answer _____

26. Write an expression for this: square n, then divide by 8.

Answer _____

27. Work out $3 \times 5 - 4^2$, $5 \times 7 - 6^2$ and $9 \times 11 - 10^2$. What do you notice? Use algebra to show it is always true, by simplifying $n \times (n + 2) - (n + 1)^2$.

Answer _____

28. Bella says x^2 is always bigger than x. Is Bella right? Explain.

Answer _____

29. Simplify $(25n + 35)/5$.

Answer _____

30. Simplify $6y^2 + 5y \times 3y$.

Answer _____