



Attempt questions first; check the separate key afterward. Show all working. Draw accurate figures where required.

A. Very short answers - 1 mark each

1. Expand $3(x+4)$.
2. Expand $-2(3x-5)$.
3. Multiply $(x+2)(x+3)$.
4. Multiply $(a-4)(a+4)$.
5. Expand $(x+5)^2$.
6. Expand $(y-3)^2$.
7. Calculate 99×101 using an identity.
8. Calculate 103^2 using an identity.

B. Short answers / practice - 2 marks each

9. Simplify $5x+3y-2x+7y$.
10. Simplify $4a-2(a-3)$.
11. Factorise $6x+18$.
12. Factorise $12ab-8a$.
13. Multiply $3x^2$ by $4x^3$.
14. Divide $15a^3b^2$ by $5ab$.
15. Expand $(2x+3)(x-4)$.
16. Expand $(a+b+c) \times 2a$.
17. Explain with an area model why $(a+b)^2$ differs from a^2+b^2 .
18. Find the missing term: $(x+7)^2 = x^2 + \square + 49$.
19. Factorise x^2-49 .
20. Factorise $x^2+8x+16$.

C. Application / reasoning - 3 marks each

21. Find $(x+2)(x-2)$ at $x=10$.

22. Simplify $(x+1)^2-(x-1)^2$.
23. A rectangle has sides $x+3$ and $x+5$. Express its area.
24. Find its perimeter in terms of x .
25. Simplify $(a+b)(a-b)+b^2$.
26. Factorise $3x^2+6x$.
27. Expand $(3x+2)(2x-5)$.
28. Factorise $25a^2-9b^2$.
29. Simplify $(x+4)^2-x(x+8)$.
30. Calculate 202×198 using an identity.
31. Find the increase in rectangle area when both sides a and b are increased by 2 units.
32. Calculate 48×52 without long multiplication.
33. Calculate 98^2 without long multiplication.
34. Use a labelled rectangle diagram to prove distributivity.
35. A square side increases from x to $x+4$. Find the increase in area.

ANSWER KEY - Numerical / closed questions

- 1) $3x+12$. 2) $-6x+10$. 3) x^2+5x+6 . 4) a^2-16 .
5) $x^2+10x+25$. 6) y^2-6y+9 . 7) 9999. 8) 10609.
9) $3x+10y$. 10) $2a+6$. 11) $6(x+3)$. 12) $4a(3b-2)$.
13) $12x^5$. 14) $3a^2b$. 15) $2x^2-5x-12$. 16) $2a^2+2ab+2ac$. 17) $14x$. 18) $(x-7)(x+7)$. 19) $(x+4)^2$. 20) 96. 21) $4x$. 22) $x^2+8x+15$. 23) $4x+16$. 24) a^2 . 25) $3x(x+2)$. 26) $6x^2-11x-10$.
27) $(5a-3b)(5a+3b)$. 28) 16. 29) 39996. 30) $2a+2b+4$ square units. 31) 2496. 32) 9604. 33) $8x+16$.