Year 8 - Topic Test - Algebraic Expressions

Name: _____

Time Allowed: 50 minutes

Instructions:

- Answer all questions on this sheet.
- Calculators may be used.
- Marks may be deducted for careless work.

Simplify

1. $8 \times b$

_____

2. $9 \times a \times a$

_____

Write an algebraic expression for the following statements. Let your number be N.

3. 3 times a number

_____

_____

4. 4 less than 4 times a number

_____

_____

5. The sum of 5 times a number and 3 times the number.

_____

_____

6. 5 more than a number

_____

Substitute $x = 3$ and $y = -2$ to find the value of the following:

7. $12x$

_____

_____

8. $4x - 7$

_____

_____

9. xy

_____

_____

10. $2x + 3y$

_____

_____

11. $(x - 5) \times y$

_____

_____

Simplify the following:

12. $g + g + g$

_____

13. $4x + 3x$

14. $4m + n$

15. $3w + 2v + 2w + 7v$

16. $8ab - x - 3ba$

17. $4x^2 + 5x - x^2 - x$

18. $2b \times 3c$

19. $3g \times -2g$

20. $4x \times 3xy \times 2y$

21. $-2x^2 \times -6x$

22. $8ab \div 2b$

23. $12 \div 16b$

24. $6x^2y \div 12x$

25. $d^3 \times d^2$

26. $b^2c^3 \times bc^4$

27. $x^7 \div x^3$

28. $2y^3z \times -5y^2z^4$

29. $15x^7y^3 \div 3x^3y^2$

30. $-12a^5b^7 \div -18a^8b^5$

31. $(x^3)^2$

32. $(a^2b^3)^4$

33. $(4y^3)^2$

Expand the following:

34. $2(x + 5)$

35. $4(k - 3)$

36. $3x(2x + y)$

37. $-3(2b - 3c)$

Expand the following, and then simplify:

38. $3(x - 2) + 4(4 + 3x)$

39. $5(2x - 3y) - (2y - 3x)$

Factorise the following:

40. $2a + 4$

41. $3a - 9$

42. $2x^2 - 6x$

43. $6a^2b + 9ab^3$

44. $-4a - 12$

45. $-8xyz + 12x^2y^2z^2$

Simplify the following:

46. $\dfrac{3x^3 \times 4x}{6x^2}$

47. $(2x + 3x) \times (9x - 4x)$

48. $(3y \times 2z) + (5y \times -z)$

49. $(g^2)^3 \times (2g^2)^2$