

Power of a Power

Name: _____

Date: _____

Remember the rule: $(a^m)^n = a^{m \times n}$

When raising a power to another power, multiply the exponents.

Section A: Simplify each expression

1. $(x^2)^3 =$ _____

2. $(y^4)^2 =$ _____

3. $(a^3)^5 =$ _____

4. $(m^6)^2 =$ _____

5. $(p^5)^4 =$ _____

6. $(b^2)^7 =$ _____

7. $(c^8)^3 =$ _____

8. $(t^4)^5 =$ _____

Section B: Simplify (include the coefficient)

9. $(2x^3)^2 =$ _____

10. $(3y^2)^3 =$ _____

11. $(4a^2)^2 =$ _____

12. $(5m^4)^2 =$ _____

13. $(2p^3)^4 =$ _____

14. $(3t^5)^2 =$ _____

Section C: Challenge questions

15. $(x^2)^3 \times x^4 =$ _____

16. $(y^3)^2 \div y^4 =$ _____

17. $(2a^3)^2 \times a =$ _____

18. $(3b^2)^3 \div b^5 =$ _____

Section D: Show your working

19. Simplify: $((x^2)^3)^2$

Working: _____

Answer: _____

20. Simplify: $(2x^2y^3)^4$

Working: _____

Answer: _____