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: _____