Lesson 9: Index Laws — Power of a Power and Mixed Practice

Year 10 Mathematics Unit 1 — Block B | Worksheet

Name _____ Date _____ Class _____

Multiple Choice

Q1. Simplify (a^3)^4.

A) a^7 B) a^12 C) a^81 D) 4a^3

Q2. Simplify (2x^3)^2.

A) 2x^6 B) 4x^5 C) 4x^6 D) 4x^9

Q3. Simplify (a^4)^3 / a^5.

A) a^7 B) a^17 C) a^60 D) a

Q4. Which is NOT equivalent to (x^2)^3?

A) x^6 B) x^2 x x^2 x x^2 C) x^5 D) x^3 x x^3

Q5. If (2^m)^3 = 64, what is the value of m?

A) 2 B) 3 C) 4 D) 5

Short Answer

Q6. Simplify (3a^2)^3, leaving your answer in index form. *(2 marks)*

Q7. Simplify ((x^3)^2 x x^4) / x^5. *(3 marks)*

Q8. Explain the difference between (a^m)^n and a^m x a^n, using numerical examples to illustrate. *(3 marks)*

Key Formulas

- Write any formulas you need here.