

**9N1.2 Demonstrate an understanding of operations on powers with integral bases (excluding base 0) and whole number exponents:**

## **Exponent Laws**

Exponent laws of powers for multiplying powers with the same base:

$$(a^m)(a^n) = a^{m+n}$$

Exponent law of powers for dividing powers with the same base:

$$a^m \div a^n = a^{m-n}$$

Exponent law of powers for power of a power:

$$(a^m)^n = a^{m \times n}$$

Exponent law of powers for power of a product:

$$(ab)^m = a^m b^m$$

Exponent law of powers for a power of a quotient:

$$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}, b \neq 0$$