

# Lesson 10: Zero and Negative Indices

Year 10 Mathematics Unit 1 — Block B | Worksheet

Name \_\_\_\_\_

Date \_\_\_\_\_

Class \_\_\_\_\_

## Multiple Choice

**Q1.** Evaluate  $5^0$ .

- A) 0   B) 1   C) 5   D) Undefined

**Q2.** Evaluate  $3^{-2}$ .

- A) -9   B) -6   C)  $\frac{1}{9}$    D)  $\frac{1}{6}$

**Q3.** Simplify  $a^{-3} / a^{-5}$ .

- A)  $a^{-8}$    B)  $a^2$    C)  $a^{-2}$    D)  $a^{15}$

**Q4.** Which expression is equal to  $1 / x^{-3}$ ?

- A)  $x^{-3}$    B)  $x^3$    C)  $-x^3$    D)  $1/x^3$

**Q5.** If  $2^{-n} = 1/16$ , what is  $n$ ?

- A) 2   B) 4   C) -4   D) 8

## Short Answer

**Q6.** Evaluate  $4^{-2} + 4^0$ . (2 marks)

**Q7.** Simplify  $(a^2 \times a^{-5}) / a^{-3}$ , giving your answer with a positive index. (3 marks)

**Q8.** Use the index law  $a^m / a^n = a^{(m-n)}$  to explain why  $a^0 = 1$  for any  $a \neq 0$ . (3 marks)

Blank area for writing answers or notes.

### Key Formulas

- Write any formulas you need here.