

# Lesson 13: Fractional Indices [PATHS]

Year 10 Mathematics Unit 1 — Block B | Worksheet

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Name \_\_\_\_\_

Date \_\_\_\_\_

Class \_\_\_\_\_

## Multiple Choice

**Q1.** Evaluate  $16^{(1/2)}$ .

A) 8 B) 4 C) 32 D) 256

**Q2.** Evaluate  $27^{(2/3)}$ .

A) 9 B) 18 C) 6 D) 81

**Q3.** Simplify  $x^{(1/2)} \times x^{(3/2)}$ .

A)  $x^{(3/4)}$  B)  $x^2$  C)  $x^{(1/3)}$  D)  $x$

**Q4.** Which expression is equal to fourth root of  $x^3$ ?

A)  $x^{(3/4)}$  B)  $x^{(4/3)}$  C)  $x^{(1/12)}$  D)  $x^{12}$

**Q5.** If  $a^{(1/2)} = 5$ , what is  $a$ ?

A) 2.5 B) 10 C) 25 D)  $\sqrt{5}$

## Short Answer

**Q6.** Evaluate  $32^{(3/5)}$ . (2 marks)

**Q7.** Simplify  $x^{(5/2)} / x^{(1/2)}$ , giving your answer with a positive index. (3 marks)

**Q8.** Explain the connection between  $a^{(1/n)}$  and  $n$ th root of  $a$ . Use  $64^{(1/3)}$  as an example. (3 marks)

### Key Formulas

- Write any formulas you need here.