



Year 9 Mathematics Indices Practice Test 1

Name _____

1 Simplify the following giving answers in index form

a) $3^3 \times 3^2$

b) $2^4 \times 2$

c) $a^3 \times a^5$

2 Simplify giving answers in index form

a) $\frac{2^5}{2^3}$

b) $3^4 \div 3$

c) $a^5 \div a^2$

3 Express in simplest index form

a) $(2^3)^2$

b) $(5^2)^4$

c) $(n^3)^5$

4 Simplify the following

a) $4^3 \div 4^3$

b) $a^4 \div a^4$

5 Simplify, giving answers in index form

a) $2^4 \times 2^5$

b) $3a^2 \times 2a^5$

c) $a^2b^3 \times a^4b^5$

d) $7a^5 \div 3ab^2$

6 Simplify, giving answers in index form

a) $5^6 \div 5^2$

b) $12a^7 \div 6a^2$

c) $m^7n^3 \div m^6n$

d) $24p^5q^2 \div 8p^3q^2$

7 Simplify

a) $(a^6)^3$

b) $(a^3)^2 \div a^4$

c) $(2a^2)^4$

d) $(p^4)^3 \div (p^2)^4$

8 Simplify

a) 6^0

b) $3^3 \times 5^0$

c) $10a^5 \div 5a^5$

d) $(2p^3)^4 \div (4p^6)^2$

9 Express the following in standard notation (scientific notation)

a) 243

b) 67 000

c) 93 800 000

10 Write as a basic numeral

a) 1.3×10^2

b) 2.431×10^2

c) 4.63×10^7

11 Express in standard notation (scientific notation)

a) 0.043

b) 0.000 059 7

12 Write the basic numeral for

a) 2.9×10^{-2}

b) 9.38×10^{-5}

13 Calculate

a) $630\,000 \times 45\,700$

b) $965 \times 476 \times 8947$

c) $43 \div 5987$

d) $0.015 \div 2.73$

14 Evaluate

a) 3^{-2}

b) 5^{-1}

c) $\left(\frac{1}{4}\right)^{-2}$

d) $\left(\frac{2}{3}\right)^{-3}$

15 Write as fractions

a) $3a^{-5}$

b) $9b^{-2}$

16 Evaluate

a) $25^{\frac{1}{2}}$

b) $27^{\frac{1}{3}}$

17 Simplify

a) $(49m^6)^{\frac{1}{2}}$

b) $2x^{\frac{1}{2}} \times 4x^{\frac{1}{2}}$