

Exercise walk-through

1.2

Indices

Pearson Edexcel · International GCSE · Mathematics A

Exercises 2.1·2.3

2.1 (Foundation) Evaluate $2^3 \times 2^4$.

2.2 (Foundation) Evaluate 2^3 .

2.3 (Foundation) Write 7.2×10^{-5} as a decimal.

Exercises 2.1·2.3

2.1 (Foundation) Evaluate $2^3 \times 2^4$.

2.1 Same base: add indices. $2^3 \times 2^4 = 2^7 = 128$.

2.2 (Foundation) Evaluate 2^3 .

2.2 $2^3 = 2 \times 2 \times 2 = 8$.

2.3 (Foundation) Write 7.2×10^{-5} as a decimal.

2.3 Move the decimal point five places left: $7.2 \times 10^{-5} = 0.000072$.

Exercises 2.4·3.1

2.4 (Higher) Evaluate $16^{(3/4)}$.

2.5 (Higher) Evaluate $2^{(-3)}$.

3.1 Decide whether this claim is true. Justify with a concrete calculation or counterexample: For every positive a , $a^2 + a^3$ equals a^5 .

Exercises 2.4·3.1

2.4 (Higher) Evaluate $16^{(3/4)}$.

2.4 $16=2^4$, so $16^{(3/4)}=2^3=8$.

2.5 (Higher) Evaluate $2^{(-3)}$.

2.5 A negative index gives a reciprocal: $2^{(-3)}=1/8=0.125$.

3.1 Decide whether this claim is true. Justify with a concrete calculation or counterexample: For every positive a , a^2+a^3 equals a^5 .

3.1 False. At $a=2$, $a^2+a^3=4+8=12$, while $a^5=32$. Adding exponents applies to multiplication of powers with the same base.

Local review guidance: show the chosen method; give the checked result; explain the condition or failed shortcut. This is authored classroom guidance.