

**YEAR 9**

Indices and Standard Form

Leave your answers in index form where the question is written in index form. In standard form the first number must be at least 1 and less than 10.

Section A · The index laws

① $3^4 \times 3^2$ 3^6

② $5^7 \div 5^4$ 5^3

③ $(2^3)^2$ 2^6

④ 7^0 1

⑤ $a^5 \times a^3$ a^8

⑥ $a^9 \div a^4$ a^5

Section B · Working them out

⑦ 2^5 32

⑧ 10^4 10000

⑨ 3^4 81

⑩ 6^3 216

⑪ 4^{-1} $1/4$

⑫ 2^{-3} $1/8$

Section C · Standard form

⑬ Write 45 000 in standard form. 4.5×10^4

⑭ Write 0.0032 in standard form. 3.2×10^{-3}

15 Write 7 200 000 in standard form. 7.2×10^6

16 Write 0.000 81 in standard form. 8.1×10^{-4}

17 Write 6.1×10^3 as an ordinary number. **6100**

18 Write 2.5×10^{-2} as an ordinary number. **0.025**

Section D • Calculating in standard form

19 $(3 \times 10^4) \times (2 \times 10^3)$ **6×10^7**

20 $(8 \times 10^6) \div (4 \times 10^2)$ **2×10^4**

21 $(5 \times 10^3) + (6 \times 10^3)$ **1.1×10^4**

22 $(1.2 \times 10^5) \div (3 \times 10^2)$ **4×10^2**
