POWERS AND ROOTS

INTEGER POWERS

NO CALCULATOR

Ref: G133. 1R1

A1 Write as a single power of 5 $5 \times 5 \times 5 \times 5 \times 5 \times 5$	**A2** Write as a single power of 3 $3 \times 3^4 \times 3^7$	**A3** Write as a single power of 4 $4^5 \times 4^2 \times 4$	**A4** Write as a single power of 2 $2^6 \times 2^4 \times 2^{-3}$
B1 Write as a single power of 6 $\frac{6^5}{6^3}$	**B2** Write as a single power of 4 $4^8 \div 4^2$	**B3** Write as a single power of 5 $\frac{5^4}{5^7}$	**B4** Write as a single power of 3 $3^{-2} \div 3^5$
C1 Find the value of n $\frac{4^n \times 4^5}{4^3} = 4^7$	**C2** Find the value of n $\frac{2^5 \times 2^n}{2^2} = 2^8$	**C3** Find the value of n $\frac{5^3 \times 5^6}{5^n} = 5^5$	**C4** Find the value of n $\frac{7^n \times 7^n}{7^9} = 7^{-3}$
D1 Write as a single power of 5 $(5^4)^3$	**D2** Write as a single power of 7 $(7^2)^5$	**D3** Write as a single power of 2 $(2^3)^{-2}$	**D4** Write as a single power of 4 $(4^3)^2 \times (4^2)^5$

REVIEW

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NO CALCULATOR

Ref: G133. 1R1

A1 Write as a single power of 5 $5 \times 5 \times 5 \times 5 \times 5 \times 5$ $= 5^6$	**A2** Write as a single power of 3 $3 \times 3^4 \times 3^7$ $= 3^{12}$	**A3** Write as a single power of 4 $4^5 \times 4^2 \times 4$ $= 4^8$	**A4** Write as a single power of 2 $2^6 \times 2^4 \times 2^{-3}$ $= 2^7$
B1 Write as a single power of 6 $\frac{6^5}{6^3}$ $= 6^2$	**B2** Write as a single power of 4 $4^8 \div 4^2$ $= 4^6$	**B3** Write as a single power of 5 $\frac{5^4}{5^7}$ $= 5^{-3}$	**B4** Write as a single power of 3 $3^{-2} \div 3^5$ $= 3^{-7}$
C1 Find the value of n $\frac{4^n \times 4^5}{4^3} = 4^7$ $n + 5 - 3 = 7$ $n = 5$	**C2** Find the value of n $\frac{2^5 \times 2^n}{2^2} = 2^8$ $n + 5 - 2 = 8$ $n = 5$	**C3** Find the value of n $\frac{5^3 \times 5^6}{5^n} = 5^5$ $3 + 6 - n = 5$ $n = 4$	**C4** Find the value of n $\frac{7^n \times 7^n}{7^9} = 7^{-3}$ $2n - 9 = -3$ $n = 3$
D1 Write as a single power of 5 $(5^4)^3$ $= 5^{12}$	**D2** Write as a single power of 7 $(7^2)^5$ $= 7^{10}$	**D3** Write as a single power of 2 $(2^3)^{-2}$ $= 2^{-6}$	**D4** Write as a single power of 4 $(4^3)^2 \times (4^2)^5$ $= 4^6 \times 4^{10}$ $= 4^{16}$