Standard Form: Background Knowledge

A Multiply or divide these numbers together ***without a calculator***.

1 3.94×6.72

2 8.231×2.7

3 15.234×26.3421

4 $12.236 \div 1.2$

5 $18.265 \div 3.5$

B Use the Laws of Indices to find the answer to these problems giving your answer in the form $\boldsymbol{a^n}$ $where\ a \in \mathbb{R}, n \in \mathbb{Z}$

1 $5^4 \times 5^7 \times 5^3$

2 $9^5 \times 9^6 \times 9^{12}$

3 $29^{17} \times 29^9 \times 29^3$

4 $23^7 \div 23^4$

5 $17^{11} \div 17^{15}$

6 $35^7 \div 35^{-3}$

7 $(7^4)^3 \div (7^2)^4$

8 $(8^4)^3 \times (8^2)^4$

9 $(17^7)^5 \times (17^4)^9$

10 $\dfrac{(19^4)^3 \times (19^2)^4}{(19^2)^3}$

C More challenging questions. Give your answer in the form a^n $where\ a \in \mathbb{R}, n \in \mathbb{Z}$

1 $\dfrac{16^4}{32^2}$

2 $\dfrac{9^{14}}{27^5}$

3 $\dfrac{25^4 \times 125^3}{625^2}$

4 $\dfrac{(81^2 \times 27 \times 243^7)^5}{(3^2)^7}$

5 $\dfrac{\left(36^7 \times 216 \times 1296^5\right)^3}{(7776^8)^4}$