



National 5 Mathematics

Indices - Solutions

Marks are indicated in brackets after each question number

2014 Paper 2 Question 8, (3)

$$\frac{n^5 \times 10n}{2n^2} = \frac{10n^6}{2n^2} = 5n^4$$

2015 Paper 1 Question 14, (2)

$$8^{\frac{5}{3}} = (8^{\frac{1}{3}})^5 = (\sqrt[3]{8})^5 = 2^5 = 32$$

2016 Paper 2 Question 10, (3)

$$\begin{aligned} & (n^2)^3 \times n^{-10} \\ &= n^6 \times n^{-10} \\ &= n^{-4} \\ &= \frac{1}{n^4} \end{aligned}$$

2017 Paper 2 Question 12, (2)

$$\frac{1}{\sqrt[3]{x}} = \frac{1}{x^{\frac{1}{3}}} = x^{-\frac{1}{3}}$$

2018 Paper 1 Question 15, (2)

$$\left(\frac{2}{3}p^4\right)^2 = \frac{4}{9}p^8$$

2019 Paper 2 Question 16, (3)

$$\frac{a^4 \times 3a}{\sqrt{a}} = \frac{3a^5}{a^{\frac{1}{2}}} = 3a^{5-\frac{1}{2}} = 3a^{\frac{9}{2}}$$



2022 Paper 1 Question 11, (3)

$$\begin{aligned}(m^{-2})^4 \times m^{-5} \\ &= m^{-8} \times m^{-5} \\ &= m^{-13} \\ &= \frac{1}{m^{13}}\end{aligned}$$

2023 Paper 1 Question 12, (3)

$$\begin{aligned}\frac{5c^{-2}}{c^3 \times c^4} &= \frac{5c^{-2}}{c^7} \\ &= 5c^{-9} \\ &= \frac{5}{c^9}\end{aligned}$$

2024 Paper 1 Question 13, (2)

$$\begin{aligned}x(x^{\frac{1}{2}} + x^{-1}) \\ &= x^{\frac{3}{2}} + x^0 \\ &= x^{\frac{3}{2}} + 1\end{aligned}$$

2025 Paper 1 Question 10, (3)

$$\begin{aligned}\frac{n^7 \times (n^3)^2}{n^4} &= \frac{n^7 \times n^6}{n^4} \\ &= \frac{n^{13}}{n^4} \\ &= n^9\end{aligned}$$