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## National 5 Maths Indices

SQA past paper and specimen paper  
questions and answers by topic

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(a) Multiply out the brackets and simplify:

$$x^{\frac{1}{2}} \left( x^{-\frac{3}{2}} + x^{-\frac{1}{2}} \right).$$

2

(b) Find the exact value of this expression when  $x = 6$ .

1

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Answers:

(a)  $x^{-1} + 1$  or equivalent

(b)  $1\frac{1}{6}$  or  $\frac{7}{6}$

National 5 Maths  
SQA 2014 Paper 2  
Question 8

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Simplify  $\frac{n^5 \times 10n}{2n^2}$ .

3

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Answer:

$$5n^4$$

National 5 Maths  
SQA 2015 Paper 1  
Question 14

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Evaluate  $8^{\frac{5}{3}}$ .

2

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Answer:

32

National 5 Maths  
SQA 2016 Paper 2  
Question 10

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Simplify  $(n^2)^3 \times n^{-10}$ .

Give your answer with a **positive** power.

3

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Answer:

$$\frac{1}{n^4}$$

National 5 Maths  
SQA 2017 Paper 2  
Question 12

Express  $\frac{1}{\sqrt[3]{x}}$  in the form  $x^n$ .

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Answer:

$$x^{-\frac{1}{3}}$$

National 5 Maths  
SQA 2018 Paper 1  
Question 15

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Remove the brackets and simplify  $\left(\frac{2}{3}p^4\right)^2$ .

2

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Answer:

$$\frac{4}{9}p^8$$

National 5 Maths  
SQA 2019 Paper 2  
Question 16

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Simplify  $\frac{a^4 \times 3a}{\sqrt{a}}$ .

3

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Answer:

$$3a^{\frac{9}{2}}$$

National 5 Maths  
SQA 2021 Paper 1  
Question 15

Evaluate  $16^{\frac{3}{2}}$ .

2

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Answer:

64

National 5 Maths  
SQA 2022 Paper 1  
Question 11

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Simplify  $(m^{-2})^4 \times m^{-5}$ .

Give your answer with a **positive** power.

3

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Answer:

$$\frac{1}{m^{13}}$$

National 5 Maths  
SQA 2023 Paper 1  
Question 12

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Simplify  $\frac{5c^{-2}}{c^3 \times c^4}$ .

Give your answer with a **positive** power.

3

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Answer:

$$\frac{5}{c^9}$$

**National 5 Maths**  
**SQA 2024 Paper 1**  
**Question 13**

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Expand and simplify fully  $x\left(x^{\frac{1}{2}} + x^{-1}\right)$ .

2

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Answer:

$$x^{\frac{3}{2}} + 1$$

**National 5 Maths**  
**SQA 2025 Paper 1**  
**Question 10**

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Simplify  $\frac{n^7 \times (n^3)^2}{n^4}$ .

3

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Answer:

$n^9$