

Indices

Syllabus tracker [Open it online](#)

Name: _____

Date: _____

Tick one circle for each statement — on screen (click) or with a pen. Then try the quick checks: write your answer in the box, check it against the answers at the end, and tick “right” when you got it. ★ = IGCSE Extended tier only.

Laws of indices

Multiplying, dividing and raising powers; zero, negative and fractional indices.

	Don't know	Shaky	Got it
I can use the laws of indices to multiply, divide and raise powers.	☐	☐	☐
I can work out zero and negative indices.	☐	☐	☐
I can work out fractional indices. ★	☐	☐	☐
I can work out negative fractional indices. ★	☐	☐	☐

Indices in algebra

Simplifying algebraic terms with powers.

	Don't know	Shaky	Got it
I can raise an algebraic term to a power.	☐	☐	☐
I can divide algebraic terms, including negative powers.	☐	☐	☐

Equations with the unknown in the power

Writing both sides with the same base, then equating the powers.

	Don't know	Shaky	Got it
I can solve a simple index equation.	☐	☐	☐
I can solve an index equation by changing both sides to the same base.	☐	☐	☐
I can solve an index equation with an expression in the power.	☐	☐	☐

Quick checks

One quick question per statement. Answer in the box, then check the answers at the end.

1. Work out the value of $2^5 \times 2^3 \div 2^4$.

Answer: _____ ☐ I got it right

2. Find the value of 4^{-2} .

Answer: _____ ☐ I got it right

3. Find the value of $8^{2/3}$.

Answer: _____ ☐ I got it right

4. Find the value of $27^{-1/3}$.

Answer: _____ ☐ I got it right

5. Simplify $(3x^2)^3$.

A $9x^5$ **B** $27x^6$ **C** $27x^5$ **D** $9x^6$

Answer: _____

☐ I got it right

6. Simplify $12a^5 \div 3a^{-2}$.

A $4a^3$ **B** $4a^7$ **C** $9a^7$ **D** $4a^{10}$

Answer: _____

☐ I got it right

7. Solve $2^x = 32$.

Answer: _____

☐ I got it right

8. Solve $9^x = 27$.

Answer: _____

☐ I got it right

9. Solve $5^{x+1} = 25^x$.

Answer: _____

☐ I got it right

Answers

Try every question first, then check.

1. 16

2. $\frac{1}{16}$

3. 4

4. $\frac{1}{3}$

5. B: $27x^6$

6. B: $4a^7$

7. 5

8. $\frac{3}{2}$

9. 1