

Name:

Date:

Tutor:

Indices

Learning Objectives

Students should be able to:

E1.7 Understand the rules of indices.

E2.4 Use the rule of positive, negative, zero and fractional indices to solve the exponential equations.



INDICES

Nos	Questions	Reference
1	Write 5^{-3} as a fraction.	Q5(a)/0580/21/O/N/16
2	Simplify. $36y^5 \div 4y^2$	Q5/0580/22/O/N/16
3	Simplify. $n^2 \times n^5$	Q2/0580/23/O/N/16
4	Simplify $(16p^{16})^{\frac{1}{4}}$.	Q12/0580/21/M/J/16
5	Simplify. $\left(\frac{1}{2}x^{\frac{2}{3}}\right)^3$	Q6/0580/22/M/J/16
6	Simplify. $(32x^{10})^{\frac{3}{5}}$	Q7/0580/23/M/J/16
7	Simplify. (a) $x^3y^4 \times x^5y^3$ (b) $(3p^2m^5)^3$	Q14/0580/22/F/M/16

Nos	Questions	Reference
8	Find the value of (a) $(\sqrt{5})^8$, (b) $\left(\frac{1}{27}\right)^{-\frac{2}{3}}$.	Q10/0580/23/O/N/15
9	Simplify. $\left(\frac{x^{64}}{16y^{16}}\right)^{\frac{1}{4}}$	Q17/0580/23/O/N/15
10	Simplify. $6uw^{-3} \times 4uw^6$	Q7/0580/21/M/J/15
11	$81^x = 3$ Find the value of x.	Q3/0580/22/M/J/15
12	Find the value of (i) $\left(\frac{1}{4}\right)^{0.5}$, (ii) $(-8)^{\frac{2}{3}}$.	Q16(a)/0580/22/M/J/15

Nos	Questions	Reference
34	Find the value of n in the following equations. (a) $2^n = 1024$ (b) $4^{2n-3} = 16$	Q14/0580/21/O/N/10
35	Simplify (a) $\left(\frac{16}{81}x^{16}\right)^{\frac{1}{2}}$, (b) $\frac{16y^{10} \times 4y^{-4}}{32y^7}$.	Q16/0580/22/O/N/10
36	$a \times 10^7 + b \times 10^6 = c \times 10^6$ Find c in terms of a and b. Give your answer in its simplest form.	Q13/0580/23/O/N/10
37	Simplify (a) $\left(\frac{p^4}{16}\right)^{0.75}$, (b) $3^2q^{-3} \div 2^3q^{-2}$.	Q16/0580/21/M/J/10
38	Write $2^8 \times 8^2 \times 4^{-2}$ in the form 2^n .	Q5/0580/22/M/J/10
39	$3^x \times 9^4 = 3^n$. Find n in terms of x.	Q6/0580/23/M/J/10