
Indices Past Edexcel Exam Questions

1. (a) Write down the value of $16^{\frac{1}{2}}$. [1]
(b) Find the value of $16^{-\frac{3}{2}}$. [2]

Question 1 - Jan 2005

2. (a) Write down the value of $8^{\frac{1}{3}}$. [1]
(b) Find the value of $8^{-\frac{2}{3}}$. [2]

Question 1 - May 2005

3. (a) Find the value of $8^{\frac{4}{3}}$. [2]
(b) Simplify $\frac{15x^{\frac{4}{3}}}{3x}$. [2]

Question 2 - May 2007

4. (a) Write down the value of $16^{\frac{1}{4}}$. [1]
(b) Simplify $(16x^{12})^{\frac{3}{4}}$. [2]

Question 2 - Jan 2008

5. (a) Write down the value of $125^{\frac{1}{3}}$. [1]
(b) Find the value of $125^{-\frac{2}{3}}$. [2]

Question 1 - Jan 2009

6. Given that $32\sqrt{2} = 2^a$, find the value of a . [3]

Question 2 - Jun 2009

7. (a) Find the value of $16^{-\frac{1}{4}}$. [2]
(b) Simplify $x \left(2x^{-\frac{1}{4}}\right)^4$. [2]

Question 1 - Jan 2011

8. Find the value of

(a) $25^{\frac{1}{2}}$. [1]

(b) $25^{-\frac{3}{2}}$. [2]

Question 1 - Jun 2011

9. (a) Evaluate $(32)^{\frac{3}{5}}$, giving your answer as an integer. [2]

(b) Simplify fully $\left(\frac{25x^4}{4}\right)^{-\frac{1}{2}}$. [2]

Question 2 - Jun 2012

10. Express 8^{2x+3} in the form 2^y , stating y in terms of x . [2]

Question 2 - Jan 2013

11. (a) Find the value of $8^{\frac{5}{3}}$. [2]

(b) Simplify fully $\frac{(2x^{\frac{1}{2}})^3}{4x^2}$. [3]

Question 3 - May 2013

12. (a) Write down the value of $32^{\frac{1}{5}}$. [1]

(b) Simplify fully $(32x^5)^{-\frac{2}{5}}$. [3]

Question 2 - May 2014

Solutions

1. (a) 4
(b) $\frac{1}{64}$
2. (a) 2
(b) $\frac{1}{4}$
3. (a) 16
(b) $5x^{\frac{1}{3}}$
4. (a) 2
(b) $8x^9$
5. (a) 5
(b) $\frac{1}{25}$
6. $\frac{11}{2}$
7. (a) $\frac{1}{2}$
(b) 16
8. (a) 5
(b) $\frac{1}{125}$
9. (a) 8
(b) $\frac{2}{5x^2}$
10. 2^{6x+9} , $y = 6x + 9$
11. (a) 32
(b) $2x^{-\frac{1}{2}}$
12. (a) 2
(b) $\frac{1}{4}x^{-2}$