JRA Tutors
Private tuition and small online Study Pods

Fractional and Negative Indices

Grade 6 topic · Higher tier · Edexcel and AQA

How to use this pack
20 questions that get harder as you go. Questions 1–15 (40 marks) build up to the harder Grade 8–9 style questions at the end; aim to complete all 20. Show your working on the lines and write your final answer on the answer line, then mark yourself with the answers at the back. Diagrams are not drawn accurately. Total: 66 marks.

Warm-up

1 Work out $4^{1/2}$. **[2 marks]**

Answer _____

2 Work out $125^{1/3}$. **[2 marks]**

Answer _____

3 Work out $49^{1/2}$. **[2 marks]**

Answer _____

4 Work out $16^{1/4}$. **[2 marks]**

Answer _____

5 Work out $8^{1/3}$. **[2 marks]**

Answer _____

Core

6 Work out $4^{3/2}$. **[3 marks]**

Answer _____

7 Work out $27^{2/3}$. **[3 marks]**

Answer _____

8 Work out $81^{3/4}$. **[3 marks]**

Answer _____

9 Work out 9^{-1}. **[3 marks]**

Answer _____

10 Work out 2^{-3}. **[3 marks]**

Answer _____

Stretch

11 Work out $4^{-1/2}$. **[3 marks]**

Answer _____

12 Work out $8^{-2/3}$. **[3 marks]**

Answer _____

13 Work out $25^{-3/2}$. **[3 marks]**

Answer _____

14 Work out $16^{-3/4}$. **[3 marks]**

Answer _____

15 Work out 4^{-2}. **[3 marks]**

Answer _____

Challenge

16 Work out $(64/125)^{-2/3}$. **[5 marks]**

Answer _____

17 Work out $(81/16)^{3/4}$. **[5 marks]**

Answer _____

18 Simplify $(8x^6)^{2/3}$. **[5 marks]**

Answer _____

19 Solve $4^x = 1/8$. **[6 marks]**

Answer _____

20 Write $(81x^8)^{-1/4}$ in the form a/x^n. **[5 marks]**

Answer _____