AQA, OCR, Edexcel

GCSE

GCSE Maths

Indices and Powers Answers

Name:

MME
Mathsmadeeasy.co.uk

Total Marks: /41

Rules of Indices (Powers)

1. Simplify the following expressions:
   a. $x^2 \times x^3 = x^5$
   b. $x^5 \times x^3 = x^8$
   c. $x^3 \div x^2 = x$
   d. $x^{10} \div x^8 = x^2$

(4 Marks)

2. Simplify the following:

$$\frac{x^{10}}{x^7} x^3 = x^6$$

(2 Marks)

3. Simplify the following
   a. $(x^2)^2 = x^4$
   b. $(3x^3)^3 = 27x^9$
   c. $(4x^2 \times 2x^2)^2 = 64x^8$

(4 Marks)

4. Evaluate the following powers:

   a. $100102^0 = 1$
   b. $1^{30} = 1$

(2 Marks)

5. Calculate the following:

   a. $\left(\frac{1}{2}\right)^2 = \frac{1}{4}$

   b. $\left(\frac{3}{4}\right)^3 = \frac{27}{64}$

   c. $\left(1\frac{1}{2}\right)^3 = \frac{27}{8}$

   d. $\left(2\frac{4}{5}\right)^2 = \frac{196}{25}$

(8 Marks)

6. Calculate the following:

   a. $16^{\frac{1}{2}} = 4$

   b. $9^{\frac{1}{2}} = 3$

   c. $27^{\frac{1}{3}} = 3$

   d. $64^{\frac{1}{3}} = 4$

   e. $16^{\frac{1}{4}} = 2$

(10 Marks)

7. Simplify the following:

   a. $25^{-\frac{1}{2}} = \frac{1}{5}$

   b. $4^{-2} = \frac{1}{16}$

   c. $64^{-\frac{1}{3}} = \frac{1}{4}$

   d. $64^{-\frac{2}{3}} = \frac{1}{16}$

(8 Marks)

8. Simplify the following:
   $$(3x^2y^3z^4)^3 = 27x^6y^9z^{12}$$

(3 Marks)