Name:

Level 2 Further Maths
Negative Indices
Fractional Indices



Ensure you have: Pencil or pen

## Guidance

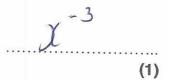
- 1. Read each question carefully before you begin answering it.
- 2. Check your answers seem right.
- 3. Always show your workings

Revision for this topic

www.corbettmaths.com/more/further-maths/



- 1. Write as a single power of x
  - (a)  $\frac{1}{x^3}$



(b)  $\sqrt[4]{x}$ 

X 1/4 (1)

(c)  $\sqrt{\frac{1}{x^8}}$ 

NOW!

$$\int x^{-8} = \chi^{-4}$$

$$(x^{-4} \times x^{-4} = \chi^{-8})$$

 $\chi^{-4}$ 

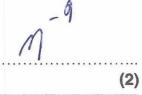
 $(d) \quad \frac{1}{\sqrt[3]{x^2}}$ 

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$$\chi^{-\frac{2}{3}}$$
(1)

2. Write  $\frac{m^3 \times m^2}{(m^7)^2}$  as a single power of m





3. Given that  $2^m + 2^n = \frac{9}{32}$ 

Find mn

$$\frac{1}{4} + \frac{1}{31}$$

$$\frac{8}{31} + \frac{1}{31} = \frac{9}{31}$$

$$\frac{1}{2} + \frac{1}{2} = \frac{7}{31}$$

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(3)

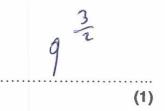
4. 
$$x \quad x^3 \quad x^0 \quad x^{-2}$$

Find a value of x such that the expressions above are in order, from smallest to largest.

5. Write  $\sqrt{w^5}$  as a single power of w

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6. Write 27 in the form  $9^n$ 



7. Simplify 
$$(16x^8)^{\frac{3}{4}}$$

8. Evaluate 
$$\left(\frac{8}{125}\right)^{-\frac{2}{3}}$$

(2)

9. 
$$3^x = 9\sqrt{3}$$
 and  $3^y = \frac{1}{\sqrt{3}}$ 

Work out  $3^{x-y}$ 

$$3^{x} = 3^{2} \times 3^{2}$$
 $3^{y} = \frac{1}{3^{y}}$ 
 $3^{y} = 3^{y}$ 
 $3^{y} = 3^{y}$ 
 $3^{y} = 3^{y}$ 

$$3^{x-y} = 3^{x} \div 3^{y}$$
  
=  $3^{x} \div 3^{-\frac{1}{2}}$   
=  $3^{3}$ 

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