GCSE HIGHER · REVISION MAT 2

Laws of indices

1 Write as a single power of 7.

$7^8 \div 7^5$

2 Work out the value of

$25^{1/2}$

3 Sam says $3^0 = 0$.

Is Sam correct? Explain.

4 Which is bigger, 2^{10} or 10^3?

Show working.

5 Show that

$8^{-2/3} = \frac{1}{4}$

6 Find x.

$3^x \times 9 = 81^2$

7 Show that

$\frac{2^5 \times 4^3}{8^2} = 2^5$

8 Solve

$2^{2x} - 5 \times 2^x + 4 = 0$

Mr&Mrs MATHS

ANSWERS · REVISION MAT 2

Laws of indices

1 7^3

2 5

3 $3^0 = 3^1 \div 3^1$

No: any non-zero number to the power 0 is 1.

4 $2^{10} = 1024$

$10^3 = 1000$

2^{10} is bigger

5 $\frac{1}{(\sqrt[3]{8})^2} = \frac{1}{2^2}$

$= \frac{1}{4}$

6 $3^{x+2} = 3^8$

$x = 6$

7 $\frac{2^5 \times 2^6}{2^6}$

$= 2^5$

8 Let $y = 2^x$: $y^2 - 5y + 4 = 0$

$y = 1$ or $y = 4$

$x = 0$ or $x = 2$

Mr&Mrs MATHS