Writing in index form

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To write a number in index form

- the base value will ALWAYS be a prime number.

Primes → 2, 3, 5, 7

Method 1) Change the given number to the base value in the question

Eg 1) write 4 as 2^n where $n \in N$

Recall N → natural numbers → the power will be a positive whole number

4

↓

(2^2)

Ans = 2^2 ← Power

↑ Base value

Recap on Number Systems - log tables Sets and Logic Pg 23

1) N → Natural (Positive whole numbers)
2) Z → Intergers (Positive and negative whole numers)
3) Q → Quotients (Fractions)
4) R → Real (All numbers - fractions, decimals, $\sqrt{}$, π)

Eg 2) Express each of the following in the form 3^n, where $n \in Q$

1) $9 \quad (3^2)$

2) $9^2 \quad (3^2)^2$ Bracket to power - multiply the powers $3^{2\times2} = 3^4$

3) $27^3 \quad (3^3)^3 \quad 3^{3\times3} = 3^9$

4) $81^2 \quad (3^4)^2 \quad 3^{4\times2} = 3^8$

Q1) Express each of the following in the form 2^n

i) 8 ii) $\sqrt{2}$ iii) $\sqrt{8}$ iv) $\sqrt{32}$

$\sqrt{} = \frac{1}{2}$

$(2)^{\frac{1}{2}}$

v) $\frac{\sqrt{8}}{2}$

Q2 Express each of the following in the form 5^n

1) 25 2) $\sqrt{5}$ 3) $\frac{25}{\sqrt{5}}$ 4) $\sqrt{125}$

5) $\frac{25}{\sqrt{125}}$