

## mobius

## Exponents - Power Law - Prime Base with Variable Power to Unknown Exponent



Solve for Rase with Known Power

$$3^n = (3^x)^2$$

$$\mathbf{5}^n = (\mathbf{5}^x)^3$$

$$\begin{vmatrix} A & 1 \\ x = \frac{1}{2n} \end{vmatrix} x = \frac{3n}{3} \begin{vmatrix} C & 2n \\ x = \frac{2n}{3} \end{vmatrix} x = \frac{6n}{1} \begin{vmatrix} E & n \\ x = \frac{n}{2} \end{vmatrix} x = n \begin{vmatrix} A & 1 \\ x = \frac{1}{3n} \end{vmatrix} x = \frac{3n}{2} \begin{vmatrix} C & n \\ x = \frac{n}{3} \end{vmatrix} x = \frac{6n}{1} \begin{vmatrix} E & 8n \\ x = \frac{5}{2n} \end{vmatrix} x = \frac{5}{2n} \begin{vmatrix} C & 1 \\ C & 1 \end{vmatrix} x = \frac{6n}{1} \begin{vmatrix} C & 1 \\ C & 1 \end{vmatrix} x = \frac{6n}{1} \begin{vmatrix} C & 1 \\ C & 1 \end{vmatrix} x = \frac{5}{2n} \begin{vmatrix} C & 1 \\ C & 1 \end{vmatrix} x = \frac{5}{2n} \begin{vmatrix} C & 1 \\ C & 1 \end{vmatrix} x = \frac{6n}{1} \begin{vmatrix} C & 1 \\ C & 1 \end{vmatrix} x = \frac{5}{2n} \begin{vmatrix} C & 1 \\ C & 1 \end{vmatrix} x = \frac{5$$

Solve for the missing exponent (x) in 3 reduced form

4 Solve for the missing exponent (x) in reduced form

$$4^n = (4^x)^3$$

$$6^n = (6^x)^3$$

$$x = 2n \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{3n}{2} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{4n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{6n}{3} \begin{vmatrix}$$

5 Solve for the missing exponent (x) in reduced form

Solve for the missing exponent (x) in 6 reduced form

$$2^n = (2^x)^3$$

$$5^n = (5^x)^2$$

$$\begin{vmatrix} A & B & C & C & D & D & E & B \\ x = 3n & x = \frac{2}{3n} & x = \frac{3n}{3} & x = \frac{n}{3} & x = \frac{9}{n} & x = \frac{9n}{1} & x = \frac{1}{2n} & x = \frac{n}{2} & x = \frac{5n}{2} & x = 2n & x = \frac{2n}{2} & x = 6n \end{vmatrix}$$

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Solve for the missing exponent (x) in 7 reduced form

Solve for the missing exponent (x) in reduced form

$$2^n = (2^x)^2$$

$$4^n = (4^x)^2$$

$$x = \frac{2n}{2} \begin{vmatrix} x & 2n \end{vmatrix} = 3n \begin{vmatrix} x & 2n \end{vmatrix} = \frac{1}{2n} \begin{vmatrix} x & 2n \end{vmatrix} = \frac{2}{2n} \begin{vmatrix} x & 2n \end{vmatrix} = \frac{n}{2} \begin{vmatrix} x & 2n \end{vmatrix} = \frac{n}{2} \begin{vmatrix} x & 2n \end{vmatrix} = \frac{1}{2n} \begin{vmatrix} x & 2n \end{vmatrix} = \frac{2n}{3} \begin{vmatrix} x & 2n \end{vmatrix} = \frac{4}{3n}$$