



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

Unknown Power

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

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

A	B	C	D	E	F
$x = \frac{3n}{5}$	$x = 4n$	$x = \frac{5n}{15}$	$x = n$	$x = 5n$	$x = \frac{2}{n}$

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

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

A	B	C	D	E	F
$x = 4n$	$x = \frac{3}{n}$	$x = 7n$	$x = n$	$x = 3n$	$x = \frac{4}{8n}$

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

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

A	B	C	D	E	F
$x = \frac{2n}{4}$	$x = 2n$	$x = 3n$	$x = 7n$	$x = n$	$x = \frac{5}{n}$

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

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

A	B	C	D	E	F
$x = \frac{3n}{9}$	$x = 3n$	$x = 7n$	$x = 4n$	$x = n$	$x = \frac{3}{9n}$

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

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

A	B	C	D	E	F
$x = 4n$	$x = n$	$x = \frac{2n}{1}$	$x = \frac{4}{8n}$	$x = 3n$	$x = \frac{8n}{1}$

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

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

A	B	C	D	E	F
$x = 5n$	$x = 3n$	$x = \frac{2n}{1}$	$x = n$	$x = \frac{2n}{3}$	$x = \frac{6n}{1}$

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

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

A	B	C	D	E	F
$x = \frac{3}{6n}$	$x = \frac{3n}{1}$	$x = \frac{3n}{6}$	$x = \frac{3}{n}$	$x = 6n$	$x = 3n$

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

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

A	B	C	D	E	F
$x = \frac{2n}{2}$	$x = 5n$	$x = n$	$x = \frac{3n}{1}$	$x = \frac{2}{2n}$	$x = 2n$