



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

with Unknown Power

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

$$(4^3)^n = 16^x$$

A	B	C	D	E	F
$x = \frac{3n}{2}$	$x = 3n$	$x = \frac{6n}{3}$	$x = \frac{6}{3n}$	$x = 8n$	$x = \frac{4}{2n}$

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

$$(2^5)^n = 4^x$$

A	B	C	D	E	F
$x = \frac{2}{2n}$	$x = \frac{6n}{5}$	$x = 2n$	$x = 8n$	$x = 7n$	$x = \frac{5n}{2}$

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

$$(3^4)^n = 9^x$$

A	B	C	D	E	F
$x = 8n$	$x = 7n$	$x = \frac{3n}{2}$	$x = \frac{3}{2n}$	$x = 2n$	$x = \frac{6n}{4}$

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

$$(2^3)^n = 4^x$$

A	B	C	D	E	F
$x = 6n$	$x = \frac{3n}{2}$	$x = \frac{6}{3n}$	$x = 5n$	$x = \frac{3n}{9}$	$x = \frac{6n}{3}$

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

$$(3^3)^n = 81^x$$

A	$x = \frac{6n}{4}$	B	$x = \frac{3n}{4}$
C	$x = 12n$	D	$x = \frac{3}{4n}$
E	$x = 3n$	F	$x = 6n$

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

$$(2^4)^n = 8^x$$

A	B	C	D	E	F
$x = \frac{4n}{3}$	$x = \frac{9n}{4}$	$x = \frac{12n}{3}$	$x = \frac{2}{3n}$	$x = 4n$	$x = \frac{4}{12n}$

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

$$(2^2)^n = 16^x$$

A	$x = \frac{2n}{4}$	B	$x = \frac{8}{2n}$
C	$x = 12n$	D	$x = 4n$
E	$x = \frac{4n}{4}$	F	$x = \frac{n}{2}$

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

$$(3^4)^n = 27^x$$

A	B	C	D	E	F
$x = \frac{4n}{3}$	$x = 3n$	$x = \frac{3}{3n}$	$x = \frac{6}{4n}$	$x = \frac{4}{8n}$	$x = \frac{8n}{3}$