



Exponents - Power Law - Variable Exponent Base with Known Power to Exponent Base with Unknown Power

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

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

A	$x = \frac{2}{4n}$	B	$x = 2n$
C	$x = 8n$	D	$x = \frac{6n}{4}$
E	$x = 12n$	F	$x = \frac{8}{3n}$

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

$$(2^n)^6 = (2^3)^x$$

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

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

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

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

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

$$(2^n)^{15} = (2^5)^x$$

A	$x = 15n$	B	$x = \frac{2}{5n}$
C	$x = 20n$	D	$x = 3n$
E	$x = 5n$	F	$x = \frac{4n}{12}$

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

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

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

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

$$(2^n)^{12} = (2^4)^x$$

A	$x = 12n$	B	$x = 3n$
C	$x = 16n$	D	$x = \frac{3n}{9}$
E	$x = \frac{9n}{4}$	F	$x = 4n$

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

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

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

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

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

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