



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

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

$$(2^n)^{15} = (2^x)^9$$

A $x = 15n$

B $x = \frac{5n}{3}$

C $x = \frac{3}{9n}$

D $x = \frac{15n}{3}$

E $x = 5n$

F $x = 3n$

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

$$(2^n)^{10} = (2^x)^6$$

A $x = 3n$

B $x = \frac{5n}{3}$

C $x = 10n$

D $x = \frac{6n}{5}$

E $x = \frac{10}{3n}$

F $x = \frac{3}{6n}$

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

$$(4^n)^4 = (4^x)^6$$

A $x = 6n$

B $x = 2n$

C $x = \frac{3n}{6}$

D $x = \frac{4n}{2}$

E $x = 3n$

F $x = \frac{2n}{3}$

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

$$(4^n)^9 = (4^x)^6$$

A $x = 2n$

B $x = 3n$

C $x = 12n$

D $x = \frac{3n}{2}$

E $x = \frac{4n}{3}$

F $x = \frac{6n}{3}$

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

$$(3^n)^6 = (3^x)^4$$

A $x = 9n$

B $x = \frac{3}{3n}$

C $x = \frac{3n}{3}$

D $x = \frac{3n}{2}$

E $x = \frac{4n}{3}$

F $x = 5n$

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

$$(2^n)^4 = (2^x)^6$$

A $x = \frac{3n}{6}$

B $x = \frac{2n}{3}$

C $x = \frac{2}{2n}$

D $x = \frac{2n}{2}$

E $x = 6n$

F $x = \frac{4n}{3}$

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

$$(4^n)^6 = (4^x)^9$$

A $x = \frac{6n}{3}$

B $x = \frac{2n}{3}$

C $x = 3n$

D $x = 8n$

E $x = 2n$

F $x = 7n$

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

$$(3^n)^{12} = (3^x)^6$$

A $x = \frac{2n}{6}$

B $x = 2n$

C $x = \frac{6n}{4}$

D $x = 5n$

E $x = 16n$

F $x = 4n$