Name

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

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

$$27^n = (3^x)^6$$

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

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

$$81^n = (3^x)^{12}$$

A	$x = \frac{4n}{12}$	B	$x = \frac{4}{12n}$
C	$x = \frac{n}{3}$	D	$x = 7n$
E	$x = \frac{12n}{3}$	F	$x = 12n$

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

$$8^n = (2^x)^9$$

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

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

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

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

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

$$8^n = (2^x)^6$$

A	B	C	D	E	F
$x = 3n$	$x = \frac{n}{2}$	$x = \frac{2}{5n}$	$x = \frac{10}{3n}$	$x = \frac{6n}{5}$	$x = 5n$

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

$$16^n = (2^x)^8$$

A	$x = \frac{4}{8n}$	B	$x = \frac{8n}{5}$
C	$x = 5n$	D	$x = \frac{n}{2}$
E	$x = \frac{10}{4n}$	F	$x = 15n$

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

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

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

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

$$16^n = (2^x)^{12}$$

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