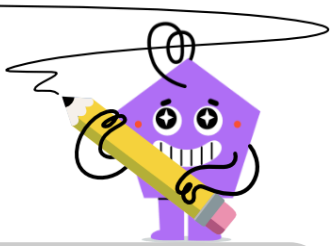
Name



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

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

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

A	B	C	D	E	F
$x = \frac{4n}{3}$	$x = \frac{2}{6n}$	$x = \frac{2n}{6}$	$x = \frac{2n}{3}$	$x = \frac{9}{2n}$	$x = 2n$

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

$$32^n = (2^3)^x$$

A	B	C	D	E	F
$x = \frac{6}{5n}$	$x = \frac{10n}{3}$	$x = 7n$	$x = 9n$	$x = \frac{5n}{3}$	$x = \frac{2}{3n}$

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

$$81^n = (3^2)^x$$

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

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

$$16^n = (2^5)^x$$

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

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

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

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

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

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

A	B
$x = \frac{2n}{6}$	$x = \frac{2n}{3}$
C	D
$x = 12n$	$x = \frac{9n}{2}$
E	F
$x = \frac{9}{2n}$	$x = \frac{3n}{3}$

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

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

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

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

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

A	B
$x = \frac{12n}{3}$	$x = 7n$
C	D
$x = 12n$	$x = \frac{4n}{12}$
E	F
$x = \frac{9}{4n}$	$x = \frac{4n}{3}$