



Math worksheet on 'Exponents - Power Law - Exponent Base with Variable Power to Composite Base with Unknown Power (Level 1)'. Part of a broader unit on 'Exponents - Multiplication and Division - Advanced'

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

$$(2^4)^n = 32^?$$

a	b	c	d	e	f
$? = \frac{8n}{5}$	$? = 6n$	$? = \frac{4n}{8}$	$? = 5n$	$? = \frac{4n}{5}$	$? = 15n$

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

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

a	b	c	d	e	f
$? = 5n$	$? = \frac{5n}{2}$	$? = 4n$	$? = 7n$	$? = 2n$	$? = \frac{10n}{2}$

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

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

a	b	c	d	e	f
$? = \frac{4n}{3}$	$? = 3n$	$? = 6n$	$? = 9n$	$? = \frac{2}{3n}$	$? = \frac{4n}{8}$

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

$$(3^2)^n = 27^?$$

a	b	c	d	e	f
$? = \frac{2n}{6}$	$? = \frac{3n}{3}$	$? = 2n$	$? = \frac{9}{2n}$	$? = 5n$	$? = \frac{2n}{3}$

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

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

a	b	c	d	e	f
$? = \frac{2}{2n}$	$? = \frac{3n}{2}$	$? = \frac{3n}{9}$	$? = \frac{2n}{2}$	$? = 8n$	$? = 6n$

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

$$(4^2)^n = 64^?$$

a	b	c	d	e	f
$? = \frac{2n}{3}$	$? = 3n$	$? = 2n$	$? = \frac{4}{3n}$	$? = \frac{2}{4n}$	$? = \frac{6n}{2}$

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

$$(2^2)^n = 8^?$$

a	b	c	d	e	f
$? = \frac{2n}{6}$	$? = 4n$	$? = \frac{2n}{3}$	$? = 3n$	$? = 9n$	$? = \frac{9n}{2}$