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Math worksheet on *'Exponents - Power Law - Prime Base with Variable Power to Composite Base with Unknown Power (Level 1)'*. Part of a broader unit on *'Exponents - Negative, Fractional, and Power Law'*

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

$$2^n = 4^?$$

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

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

$$5^n = 25^?$$

a	b	c	d	e	f
$? = 4n$	$? = \frac{4}{n}$	$? = 6n$	$? = \frac{4n}{1}$	$? = \frac{n}{2}$	$? = \frac{1}{2n}$

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

$$4^n = 16^?$$

a	b	c	d	e	f
$? = \frac{4n}{1}$	$? = \frac{n}{2}$	$? = \frac{2n}{2}$	$? = \frac{1}{2n}$	$? = n$	$? = \frac{4}{2n}$

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

$$3^n = 9^?$$

a	b	c
$? = n$	$? = 4n$	$? = \frac{1}{2n}$
d	**e**	**f**
$? = \frac{4n}{1}$	$? = \frac{3n}{2}$	$? = \frac{n}{2}$

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

$$4^n = 64^?$$

a	b	c	d	e	f
$? = \frac{1}{3n}$	$? = \frac{4n}{3}$	$? = n$	$? = 9n$	$? = \frac{n}{3}$	$? = 5n$

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

$$6^n = 36^?$$

a	b	c	d	e	f
$? = n$	$? = \frac{n}{2}$	$? = \frac{n}{3}$	$? = \frac{1}{3n}$	$? = \frac{6}{n}$	$? = \frac{3n}{2}$

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

$$3^n = 27^?$$

a	b	c	d	e	f
$? = \frac{1}{3n}$	$? = 4n$	$? = \frac{3n}{3}$	$? = 12n$	$? = \frac{9}{n}$	$? = \frac{n}{3}$