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Math worksheet on *'Exponents - Power Law - Prime Base with Variable Power to Exponent 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

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

a	b	c	d	e	f
$? = \dfrac{3}{4n}$	$? = 5n$	$? = 12n$	$? = \dfrac{n}{4}$	$? = 4n$	$? = 2n$

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

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

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

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

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

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

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

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

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

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

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

a	b	c	d	e	f
$? = \dfrac{15n}{4}$	$? = 4n$	$? = 12n$	$? = \dfrac{2n}{4}$	$? = \dfrac{5}{15n}$	$? = \dfrac{n}{4}$

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

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

a	b	c	d	e	f
$? = \dfrac{9}{5n}$	$? = \dfrac{5n}{15}$	$? = \dfrac{2}{3n}$	$? = 9n$	$? = \dfrac{15n}{3}$	$? = \dfrac{n}{3}$

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

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

a	b	c	d	e	f
$? = \dfrac{4}{2n}$	$? = \dfrac{4}{3n}$	$? = 6n$	$? = 4n$	$? = \dfrac{n}{2}$	$? = 7n$