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

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

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

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

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

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

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

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

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

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

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

a	b	c	d	e	f
$? = \frac{n}{2}$	$? = n$	$? = 6n$	$? = \frac{1}{2n}$	$? = 9n$	$? = \frac{6}{n}$

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

$$5^n = (5^?)^3$$

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

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

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

a	b	c	d	e	f
$? = \frac{4n}{3}$	$? = \frac{1}{2n}$	$? = \frac{2n}{3}$	$? = \frac{n}{2}$	$? = 9n$	$? = \frac{6n}{1}$

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

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

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