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Math worksheet on *'Exponents - Power Law - Composite 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

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

a	b	c	d	e	f
$? = 20n$	$? = \dfrac{15}{4n}$	$? = \dfrac{4}{12n}$	$? = 15n$	$? = 4n$	$? = \dfrac{4n}{5}$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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