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

$$25^n = 5^?$$

a	b	c	d	e	f
$? = 2n$	$? = \dfrac{5}{n}$	$? = 7n$	$? = \dfrac{5n}{1}$	$? = \dfrac{2}{2n}$	$? = \dfrac{4n}{1}$

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

$$16^n = 2^?$$

a	b	c	d	e	f
$? = 6n$	$? = 3n$	$? = \dfrac{2n}{1}$	$? = 4n$	$? = \dfrac{2}{n}$	$? = \dfrac{8n}{1}$

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

$$81^n = 3^?$$

a	b	c	d	e	f
$? = \dfrac{3n}{1}$	$? = \dfrac{4}{12n}$	$? = 3n$	$? = \dfrac{3}{n}$	$? = 7n$	$? = 4n$

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

$$64^n = 4^?$$

a	b	c	d	e	f
$? = 3n$	$? = \dfrac{2}{3n}$	$? = \dfrac{3n}{6}$	$? = \dfrac{6n}{1}$	$? = n$	$? = 7n$

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

$$36^n = 6^?$$

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

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

$$4^n = 2^?$$

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

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

$$16^n = 4^?$$

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