Math worksheet on *'Exponents - Power Law - Exponent 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

$$(4^3)^n = (4^2)^?$$

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

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

$$(4^2)^n = (4^3)^?$$

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

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

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

a	b	c	d	e	f
$?=3n$	$?=6n$	$?=\frac{3}{3n}$	$?=\frac{8n}{3}$	$?=\frac{4n}{3}$	$?=9n$

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

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

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

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

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

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

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

$$(2^3)^n = (2^4)^?$$

a	b	c	d	e	f
$?=\frac{12}{3n}$	$?=\frac{2}{4n}$	$?=\frac{9n}{4}$	$?=16n$	$?=\frac{3n}{4}$	$?=\frac{3}{9n}$

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

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

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