



**THIRD SPACE
LEARNING**

Laws of Exponents Worksheet

Algebra

Grades 9 to 12

Questions

Name:

Date:

- 1 Rewrite in radical form:

$$x^{\frac{1}{2}}$$

Answer

- 2 Simplify:

$$(27)^{\frac{1}{3}}$$

Answer

- 3 Rewrite in radical form:

$$y^{\frac{3}{4}}$$

Answer

- 4 Rewrite $5\sqrt{a^3}$ in exponential form.

Answer

- 5 Simplify:

$$16^{\frac{3}{4}}$$

Answer

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- 6 Rewrite in radical form, then solve:

$$49^{\frac{1}{2}}$$

Answer

- 7 Rewrite in radical form:

$$x^{\frac{5}{6}}$$

Answer

- 8 Simplify:

$$(125^{\frac{1}{3}})^2$$

Answer

- 9 Rewrite $\sqrt[3]{y^4}$ in exponential form.

Answer

- 10 Simplify:

$$(8^{\frac{2}{3}})^3$$

Answer

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11 Rewrite in radical form:

$$y^{\frac{2}{5}}$$

Answer

12 Simplify:

$$(64)^{\frac{1}{3}}$$

Answer

13 Rewrite in radical form:

$$a^{\frac{7}{2}}$$

Answer

14 Rewrite ${}^7\sqrt{b^3}$ in exponential form.

Answer

15 Simplify:

$$81^{\frac{3}{4}}$$

Answer

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Solve each equation for x .

16 $10,000^{\frac{1}{4}} = 100^x$

Answer

17 $32^{\frac{2}{5}} = 2^x$

Answer

18 $(49^3)^x = 7$

Answer

19 $81^{\frac{1}{4}} = 3^x$

Answer

20 $16^{\frac{3}{2}} = 4^x$

Answer

Answers

Question number	Question	Answers	Standard
1	Rewrite in radical form: $x^{\frac{1}{2}}$	\sqrt{x}	HSN-RN.A.1
2	Simplify: $(27)^{\frac{1}{3}}$	3	HSN-RN.A.1
3	Rewrite in radical form: $y^{\frac{3}{4}}$	$\sqrt[4]{y^3}$	HSN-RN.A.1
4	Rewrite $5\sqrt{a^3}$ in exponential form.	$a^{\frac{3}{5}}$	HSN-RN.A.1
5	Simplify: $16^{\frac{3}{4}}$	8	HSN-RN.A.1
6	Rewrite in radical form, then solve: $49^{\frac{1}{2}}$	$\pm\sqrt{49} = \pm 7$	HSN-RN.A.1
7	Rewrite in radical form: $x^{\frac{5}{6}}$	$\sqrt[6]{x^5}$	HSN-RN.A.1
8	Simplify: $(125^{\frac{1}{3}})^2$	25	HSN-RN.A.1
9	Rewrite $\sqrt[3]{y^4}$ in exponential form.	$y^{\frac{4}{3}}$	HSN-RN.A.1
10	Simplify: $(8^{\frac{2}{3}})^3$	64	HSN-RN.A.1

Laws of Exponents Worksheet | Grades 9 to 12 | Answers




Question number	Question	Answers	Standard
11	Rewrite in radical form: $y^{\frac{2}{5}}$	$\sqrt[5]{y^2}$	HSN-RN.A.1
12	Simplify: $(64)^{\frac{1}{3}}$	4	HSN-RN.A.1
13	Rewrite in radical form: $a^{\frac{7}{2}}$	$\sqrt{a^7}$	HSN-RN.A.1
14	Rewrite $\sqrt[7]{b^3}$ in exponential form.	$b^{\frac{3}{7}}$	HSN-RN.A.1
15	Simplify: $81^{\frac{3}{4}}$	27	HSN-RN.A.1
16	$10,000^{\frac{1}{4}} = 100^x$	$\frac{1}{2}$	HSN-RN.A.1
17	$32^{\frac{2}{5}} = 2^x$	2	HSN-RN.A.1
18	$(49^3)^x = 7$	$\frac{1}{6}$	HSN-RN.A.1
19	$81^{\frac{1}{4}} = 3^x$	1	HSN-RN.A.1
20	$16^{\frac{3}{2}} = 4^x$	3	HSN-RN.A.1

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