



**THIRD SPACE  
LEARNING**

# How to simplify radicals Worksheet

Algebra

**Grades 6 to 8**

## Skill Questions

Name: .....

Date: .....

1  $\sqrt{7 \cdot 7} = \underline{\hspace{2cm}}$

Answer

2  $\sqrt{3^2} = \underline{\hspace{2cm}}$

Answer

3  $\pm\sqrt{64} = \underline{\hspace{2cm}}$

Answer

4  $\pm\sqrt{144} = \underline{\hspace{2cm}}$

Answer

5  $\sqrt{16} = \sqrt{\hspace{1cm}}^2$

Answer

## How to simplify radicals Worksheet | Grades 6 to 8

6  ${}^3\sqrt{9^3} = \underline{\hspace{2cm}}$

Answer

7  ${}^3\sqrt{4 \cdot 4 \cdot 4} = \underline{\hspace{2cm}}$

Answer

8  $\pm {}^3\sqrt{125} = \underline{\hspace{2cm}}$

Answer

9  $\pm {}^3\sqrt{1000} = \underline{\hspace{2cm}}$

Answer

10  ${}^3\sqrt{343} = \sqrt[3]{\hspace{1cm}}$

Answer

## Applied Questions

- 11 A square has an area of 121 feet. What is the length of one side?

Answer

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- 12 Terry designs a gift box shaped like a cube. The volume of the box is 512 cubic inches. What is the height of the box?

Answer

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- 13 Explain each part of the equation shown.

$$\pm\sqrt{b \cdot b} = \pm b$$

Answer

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## How to simplify radicals Worksheet | Grades 6 to 8

- 14 Kenna wrote the equation  $\sqrt{225} = 15 \cdot 15$ . Do you agree with Kenna's equation? Explain any errors.

Answer

15  $\sqrt[3]{y^3} = \underline{\hspace{2cm}}$

Answer

## Answers

Question number	Question	Answers	Standard
1	$\sqrt{7 \cdot 7} = \underline{\hspace{1cm}}$	7	8.EE.A.2
2	$\sqrt{3^2} = \underline{\hspace{1cm}}$	3	8.EE.A.2
3	$\pm\sqrt{64} = \underline{\hspace{1cm}}$	$\pm 8$	8.EE.A.2
4	$\pm\sqrt{144} = \underline{\hspace{1cm}}$	$\pm 12$	8.EE.A.2
5	$\sqrt{16} = \sqrt{\hspace{1cm}^2}$	$\sqrt{16} = \sqrt{(-4)^2}$ or $\sqrt{16} = \sqrt{4^2}$	8.EE.A.2
6	$^3\sqrt{9^3} = \underline{\hspace{1cm}}$	9	8.EE.A.2
7	$^3\sqrt{4 \cdot 4 \cdot 4} = \underline{\hspace{1cm}}$	4	8.EE.A.2
8	$\pm^3\sqrt{125} = \underline{\hspace{1cm}}$	$\pm 5$	8.EE.A.2
9	$\pm^3\sqrt{1000} = \underline{\hspace{1cm}}$	$\pm 10$	8.EE.A.2
10	$^3\sqrt{343} = \sqrt[3]{\hspace{1cm}^3}$	$^3\sqrt{343} = ^3\sqrt{7^3}$	8.EE.A.2
11	A square has an area of 121 feet. What is the length of one side?	11 feet	8.EE.A.2
12	Terry designs a gift box shaped like a cube. The volume of the box is 512 cubic inches. What is the height of the box?	8 inches	8.EE.A.2

## How to simplify radicals Worksheet | Grades 6 to 8 | Answers

Question number	Question	Answers	Standard
13	<p>Explain each part of the equation shown.</p> $\pm\sqrt{b \cdot b} = \pm b$	<p>Answers will vary.</p> <p>Example answer:</p> <p>The first part is the square root of <math>b</math> times itself. This makes <math>b^2</math>. The square root of that is <math>b</math>. The square root can be positive or negative, because <math>-b \times -b = b^2</math></p>	8.EE.A.2
14	<p>Kenna wrote the equation <math>\sqrt{225} = 15 \cdot 15</math>. Do you agree with Kenna's equation? Explain any errors.</p>	<p>Answers will vary.</p> <p>Example answer:</p> <p>No, Kenna is wrong, because <math>\sqrt{225} = 15</math>. Since <math>15 \cdot 15 = 225</math>, Kenna got confused and did not take the square root.</p>	8.EE.A.2
15	$\sqrt[3]{y^3} = \underline{\hspace{2cm}}$	$y$	8.EE.A.2

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