

Name: <i>Key</i>	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
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PERFECT SQUARES	<p>The square of an integer is called a <u>perfect square</u>.</p> <p style="text-align: center;">Generate the first 10 perfect squares below:</p> <table style="width: 100%; text-align: center;"> <tr> <td>1^2</td><td>2^2</td><td>3^2</td><td>4^2</td><td>5^2</td><td>6^2</td><td>7^2</td><td>8^2</td><td>9^2</td><td>10^2</td> </tr> <tr> <td><u>1</u></td><td><u>4</u></td><td><u>9</u></td><td><u>16</u></td><td><u>25</u></td><td><u>36</u></td><td><u>49</u></td><td><u>64</u></td><td><u>81</u></td><td><u>100</u></td> </tr> </table>	1^2	2^2	3^2	4^2	5^2	6^2	7^2	8^2	9^2	10^2	<u>1</u>	<u>4</u>	<u>9</u>	<u>16</u>	<u>25</u>	<u>36</u>	<u>49</u>	<u>64</u>	<u>81</u>	<u>100</u>
1^2	2^2	3^2	4^2	5^2	6^2	7^2	8^2	9^2	10^2												
<u>1</u>	<u>4</u>	<u>9</u>	<u>16</u>	<u>25</u>	<u>36</u>	<u>49</u>	<u>64</u>	<u>81</u>	<u>100</u>												

SQUARE ROOTS	<ul style="list-style-type: none"> The opposite of squaring a number is finding the <u>square root</u>. Positive numbers have <u>2</u> square roots. <ul style="list-style-type: none"> ➤ Why? What number(s) can you square to get 16? <u>4, -4</u> Negative numbers have <u>No</u> square roots. What number only has one square root? <u>0</u>
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RADICAL NOTATION	<ul style="list-style-type: none"> The radical sign, \sqrt{x}, is used to indicate the square root of x. <ul style="list-style-type: none"> ➤ \sqrt{x} is used to indicate the <u>positive</u> square root of x. ➤ $-\sqrt{x}$ is used to indicate the <u>negative</u> square root of x.
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<i>Examples</i>	Directions: Find each square root.		
	1. $\sqrt{49}$ <u>7</u>	2. $\sqrt{9}$ <u>3</u>	3. $-\sqrt{4}$ <u>-2</u>
	4. $-\sqrt{289}$ <u>-17</u>	5. $-\sqrt{196}$ <u>-14</u>	6. $\sqrt{484}$ <u>22</u>
	7. $\sqrt{\frac{1}{16}}$ <u>$\frac{1}{4}$</u>	8. $-\sqrt{\frac{81}{25}}$ <u>$-\frac{9}{5}$</u>	9. $\sqrt{\frac{49}{144}}$ <u>$\frac{7}{12}$</u>

PERFECT VS. NON-PERFECT Squares	<p style="text-align: center;">Directions: CIRCLE each value that is a perfect square.</p> <p style="text-align: center;"> 9 32 50 121 1 160 64 200 324 </p> <p style="text-align: center;">If a number is not a perfect square, it's called a non-perfect square.</p>
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Estimating NON-PERFECT SQUARE ROOTS

Directions: Identify the two consecutive integers in which each square root lies between.

10. $\sqrt{10}$ 3, 4	11. $\sqrt{115}$ 10, 11	12. $\sqrt{59}$ 7, 8
13. $-\sqrt{41}$ -7, -6	14. $-\sqrt{3}$ -2 , -1	15. $-\sqrt{206}$ -15, -14

Directions: Approximate each square root to the nearest tenth.

16. $\sqrt{84}$	17. $-\sqrt{27}$	18. $\sqrt{145}$
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PERFECT CUBES

The cube of an integer is called a perfect cube.

Generate the first 10 perfect cubes below:

1^3	2^3	3^3	4^3	5^3	6^3	7^3	8^3	9^3	10^3
1	8	27	64	125	216	343	512	729	1000

CUBE ROOTS

- The opposite of cubing a number is finding the cube root.
- ALL integers have only 1 cube root.
 - **Why?** What number(s) can you cube to get 8? 2
 - What number(s) can you cube to get -8? -2
- The **radical sign**, $\sqrt[3]{x}$, is used to indicate the cube root of x .

Examples

Directions: Find each cube root.

19. $\sqrt[3]{64}$ 4	21. $\sqrt[3]{343}$ 7	21. $\sqrt[3]{-27}$ -3
22. $\sqrt[3]{-1}$ -1	23. $\sqrt[3]{-2,197}$ -13	24. $\sqrt[3]{512}$ 8

Summary: _____

