Lesson 1.3 Introducing Irrational Numbers Day 2

Objective

- Understand irrational numbers and how they fill the number line.

- Use rational numbers to locate irrational numbers approximately on the number line.

- **Common Core State Standards** *7.NS.1 & 7.NS.2.d*
- **Mathematical Practices** 2. Reason 4. Model mathematics. 5. Use tools strategically. 6. Attend to precision. 7. Look for and use structures

Lesson 1.3 Introducing Irrational Numbers

Graph $-\sqrt{3}$ on the number line using rational approximations.

Step 1 Find the approximate value using a calculator
Step 2 Graph the interval on the number line
Step 3 Use the approximate value with two decimal places
Step 4 Use decimals to locate approximately on the number line

Lesson 1.3 Introducing Irrational Numbers

Graph $-\sqrt{3}$ on the number line using rational approximations.

Step 1 Find the approximate value using a calculator

$$-\sqrt{3} = -1.732050808\ldots$$

Step 2 Graph the interval on the number line

Step 3 Use the approximate value with two decimal places

Step 4 Use decimals to locate approximately on the number line

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Lesson 1.3 Introducing Irrational Numbers

Graph $-\sqrt{3}$ on the number line using rational approximations.

$-\sqrt{3}$ lies between -1.8 and -1.7. So, $-1.8 < -\sqrt{3} < -1.7$.

Math Note

Just as -1 means "the opposite of 1," $-\sqrt{3}$ means the opposite of $\sqrt{3}$.

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Step 2 Graph the interval on the number line

−1.8   −1.7

Step 3 Use the approximate value with two decimal places

−1.73 is closer to −1.7 than to −1.8.

So, $-\sqrt{3}$ is located closer to −1.73

Step 4 Use decimals to locate approximately on the number line

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−1.8 $-\sqrt{3}$ −1.7

Lesson 1.3 Introducing Irrational Numbers

Let's Try together

Practice 1.3

Locate each positive irrational number on the number line using rational approximations. First tell which two whole numbers the square root is between.

1 $\sqrt{3}$ **2** $\sqrt{7}$ **3** $\sqrt{11}$

4 $\sqrt{26}$ **5** $\sqrt{34}$ **6** $\sqrt{48}$

Locate each negative irrational number on the number line using rational approximations. First tell which two integers the square root is between.

7 $-\sqrt{5}$ **8** $-\sqrt{6}$ **9** $-\sqrt{17}$
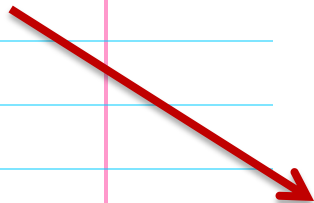
10 $-\sqrt{26}$ **11** $-\sqrt{53}$ **12** $-\sqrt{80}$

13 $\sqrt{47}$ **14** $-\sqrt{15}$ **15** $\sqrt[3]{94}$

Lesson 1.3 Introducing Irrational Numbers

Let's Try together

7 $-\sqrt{5}$

Lesson 1.3 Introducing Irrational Numbers

Let's Try together

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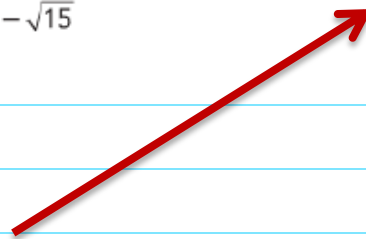
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Lesson 1.3 Introducing Irrational Numbers

Let's Try together

15 $\sqrt[3]{94}$

Cube Roots Calculator

$\sqrt[3]{}$

Calculate

Answer:

Reset

http://www.calculatorsoup.com/calculators/algebra/cuberoots.php

Lesson 1.3 Introducing Irrational Numbers

Let's Try together

15 $\sqrt[3]{94}$

Cube Roots Calculator

$\sqrt[3]{94}$

Calculate

Answer:
= 4.546836

Reset

http://www.calculatorsoup.com/calculators/algebra/cuberoots.php

Lesson 1.3 Introducing Irrational Numbers

Independent Practice #7-19

Practice 1.3

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13. $\sqrt{47}$
14. $-\sqrt{15}$
15. $\sqrt[3]{94}$

✓ Lesson Check #8

(can locate positive irrational number son the number line)

Lesson 1.3 Powers of Powers

Understanding of Learning

Ticket Out the Door

Explain what an irrational number is and give examples.