Lesson 5
Plot Real Numbers

NAME:

Start by navigating to the Online Lesson for instructions.

Objectives

- Plot rational numbers on a number line
- Approximate irrational numbers on a number line
- Compare rational and irrational numbers using greater than or less than

Why?

All real numbers can be plotted on a number line. When you are able to plot numbers on a number line, each numerical value is connected to a visual representation of that quantity. You can see the values and how they relate to each other. This knowledge builds the foundation for nearly every math concept that follows, such as comparing values, finding the distance between two points, and graphing functions.

Explore

Plot Real Numbers

Fill in the notes as you watch the video in the Online Lesson.

- Any real number can be represented on a _____.
- A number line extends to _____ on the right and to _____ on the left, indicated by arrows on each side of the number line.
- _____ separates negative and positive numbers.

- Between each integer on the number line there are _____ points.
- The _____ of a number line is what it is counting by, or the distance between two tick marks.

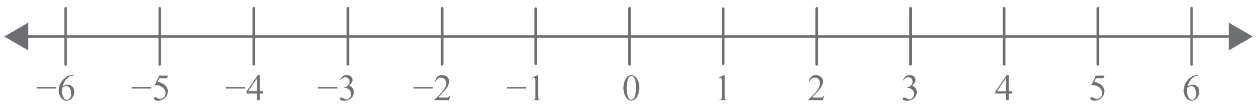
- If a number is not an integer, find the _____ equivalent, or an approximation by using technology, to plot the point accurately.
- Rational numbers can be plotted _____ by changing the scale of the number line.
- Irrational numbers must be _____ to be plotted on a number line because there is no equivalent exact decimal.
- Find the decimal approximation of the irrational number using technology to _____ irrational and rational numbers.
- Because an irrational number _____ a rational number, it will either be _____ or _____ the rational number.

Example 1

Complete the example as you watch the video in the Online Lesson.

Plot and label the rational numbers on a number line. Label with the original form of the number.

$$-\frac{5}{4}, \frac{7}{2}, 250\%, -\frac{12}{3}$$



Example 2

Complete the example as you watch the video in the Online Lesson.

Plot and label the real numbers on a number line. Label with the original form of the number.

$-\sqrt{1},\ \pi,\ 5,\ -\sqrt{10}$

Example 3

Complete the example as you watch the video in the Online Lesson.

Compare the rational and irrational numbers using greater than or less than.

A) $2 \bigcirc \sqrt{2}$

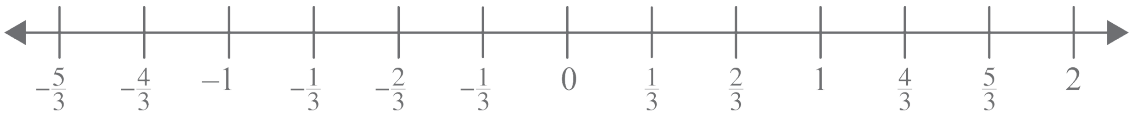
B) $-\sqrt{21} \bigcirc -\frac{15}{5}$

C) $\pi \bigcirc \frac{14}{9}$

Practice

Plot the rational numbers on a number line.

1) **A)** $-\frac{1}{3}$ **B)** $-\frac{5}{3}$ **C)** 2 **D)** $\frac{4}{3}$



2) **A)** -4 **B)** -10 **C)** 6 **D)** 8

Plot and label the real numbers on a number line. Label with the original form of the number.

3) **A)** 100% **B)** $\sqrt{3}$ **C)** $-\sqrt{11}$

4) **A)** 3.52 **B)** π **C)** $-\sqrt{4}$

Plot and label the real numbers on a number line. Label with the original form of the number.

5) **A)** $-\frac{5}{2}$ **B)** $\frac{1}{5}$ **C)** $\sqrt{5}$

Compare the rational and irrational numbers using greater than or less than.

6) $3 \bigcirc \sqrt{3}$

7) $\sqrt{17} \bigcirc 4.5$

8) $\sqrt{6} \bigcirc 2.5$

9) $\frac{26}{3} \bigcirc \sqrt{77}$

10) $\pi \bigcirc 3.14$

11) $-5 \bigcirc -\sqrt{5}$

12) $-\frac{7}{8} \bigcirc -\sqrt{7}$

To continue, return to the Online Lesson.