

## REAL NUMBERS

### What Are Real Numbers?

**Real numbers** are the set of rational and irrational numbers. The set of rational numbers includes integers, whole numbers, and natural numbers.

- A **rational** number is a number that can be made into a fraction. Decimals that repeat or terminate are rational because they can be changed into fractions.
- An **irrational** number is a number that cannot be made into a fraction. Decimals that do not repeat or end are irrational numbers.

• A  
it  
b



### PREVIEW

Please [Sign In](#) or [Sign Up](#) to download the printable version of this worksheet

ber,  
tical  
ber

- The **square** of a number is a number multiplied by itself. Three squared,  $3^2$ , is equal to  $3 \cdot 3$ , which is 9.



## How to use real numbers

Any **real number** is either rational or irrational.

Pi is an irrational number. Which of the following numbers are rational? Which are irrational?

Ex.  $.125$   $\sqrt{2}$   $\sqrt{169}$   $\sqrt{189}$   $.5436791\dots$

The real numbers,  $.125$  and  $\sqrt{169}$  are rational because  $.125$  terminates and  $\sqrt{169} = 13$ . The real numbers,  $\sqrt{2}$ ,  $\sqrt{189}$  and  $.5436791\dots$  are irrational because they all are decimals that do not repeat or terminate,  $\sqrt{2} = 1.414213562\dots$ ,  $\sqrt{189} = 13.74772708\dots$  and  $.5436791\dots$

- o **Square roots** of numbers can be rational or irrational. The  $\sqrt{64}$  is



**PREVIEW**

Please [Sign In](#) or [Sign Up](#) to download the printable version of this worksheet

## Try This!

1. Which numbers are **rational**? **irrational**?

$$14/12$$

$$\sqrt{2.56}$$

$$\sqrt{3.6} \pi$$

2. What are the following numbers **squared**?

$$8.2$$

$$14$$

3. V



**PREVIEW**

Please [Sign In](#) or [Sign Up](#) to download the printable version of this worksheet

4. What is the **area** of a square painting that has sides of 16"?

5. If a square tile has an area of 72.25 in.<sup>2</sup>, how long are the **sides**?

6. **Solve** for x for the following equations:

$$x^2 + 3 = 52$$

$$3x^2 = 192 \quad x^2/4 = 36$$