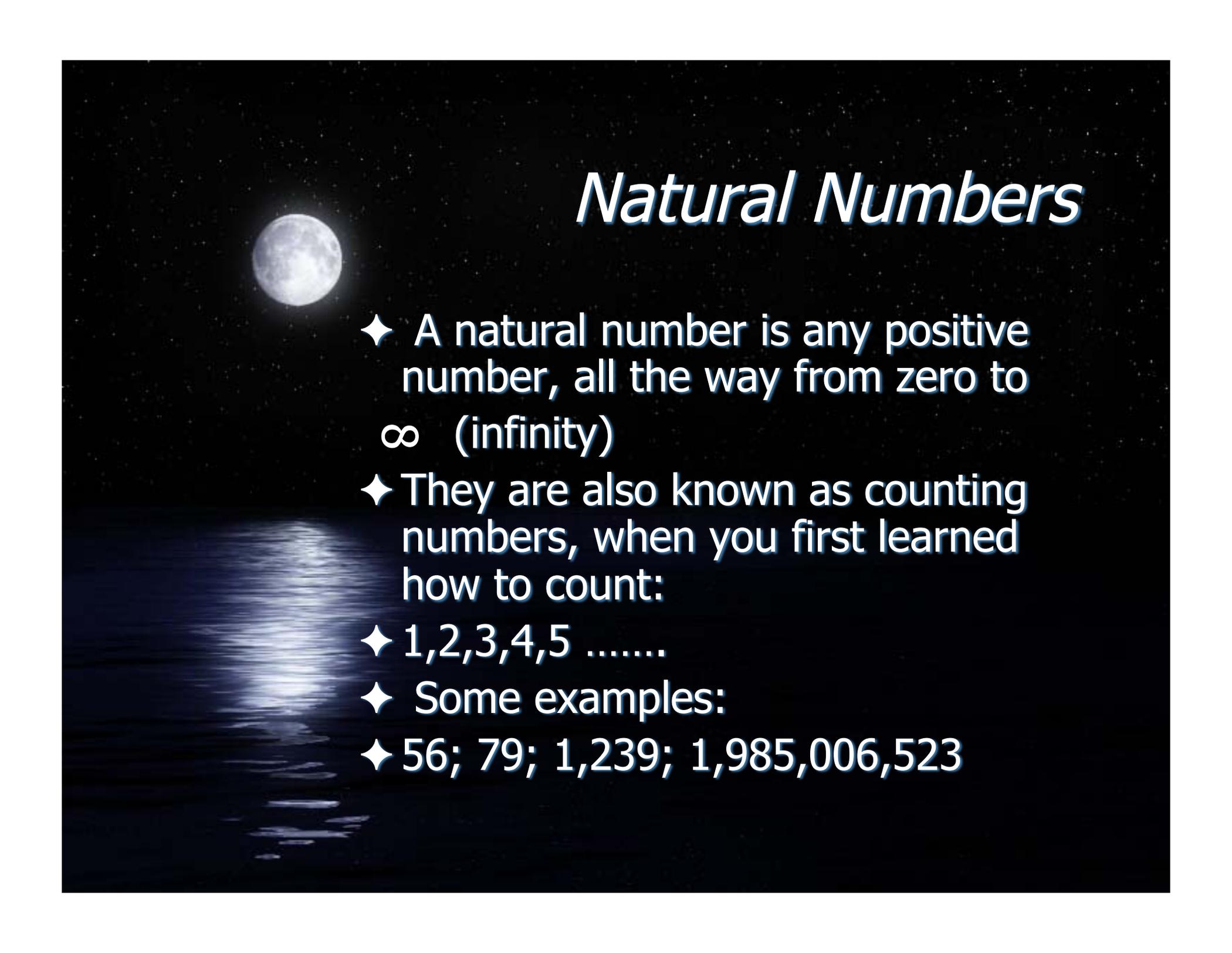
A full moon is visible in the upper left quadrant of a dark, starry night sky. Below the moon, a body of water reflects the moon's light, creating a shimmering path that extends towards the bottom of the frame. The overall scene is serene and atmospheric.

# *Types of Numbers*

The following slide show will  
talk about and explain:  
Natural numbers, Whole  
numbers, Integers, Rational  
numbers and Irrational  
numbers.

-MaxStudy-

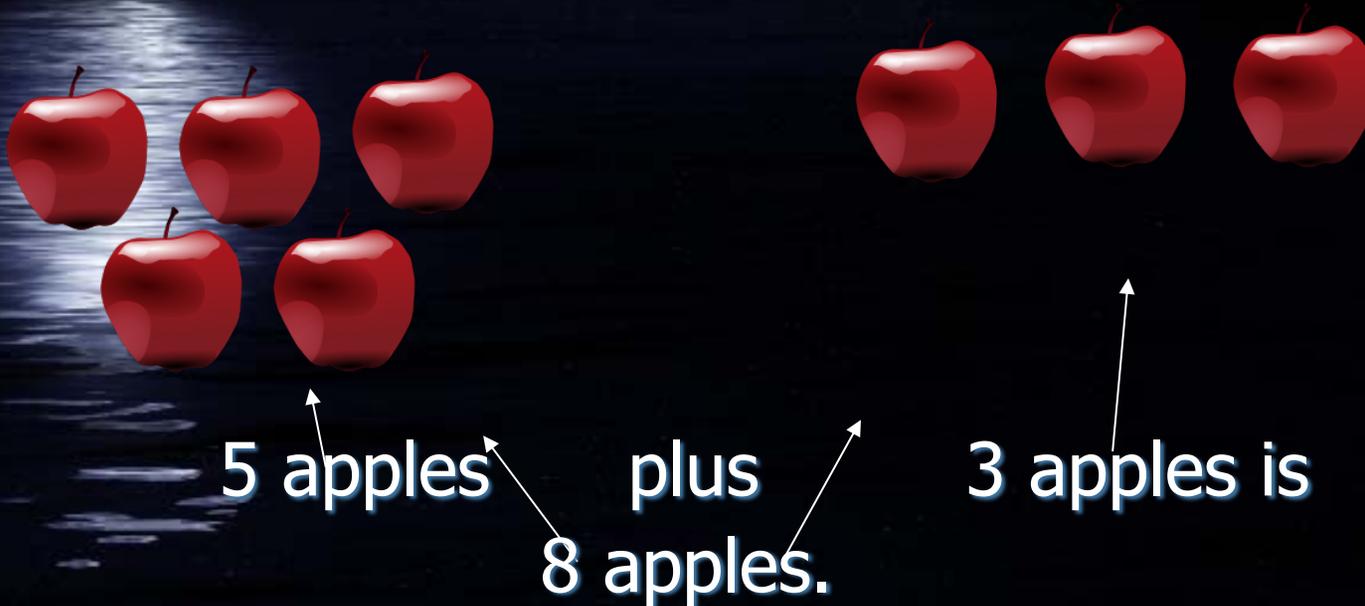
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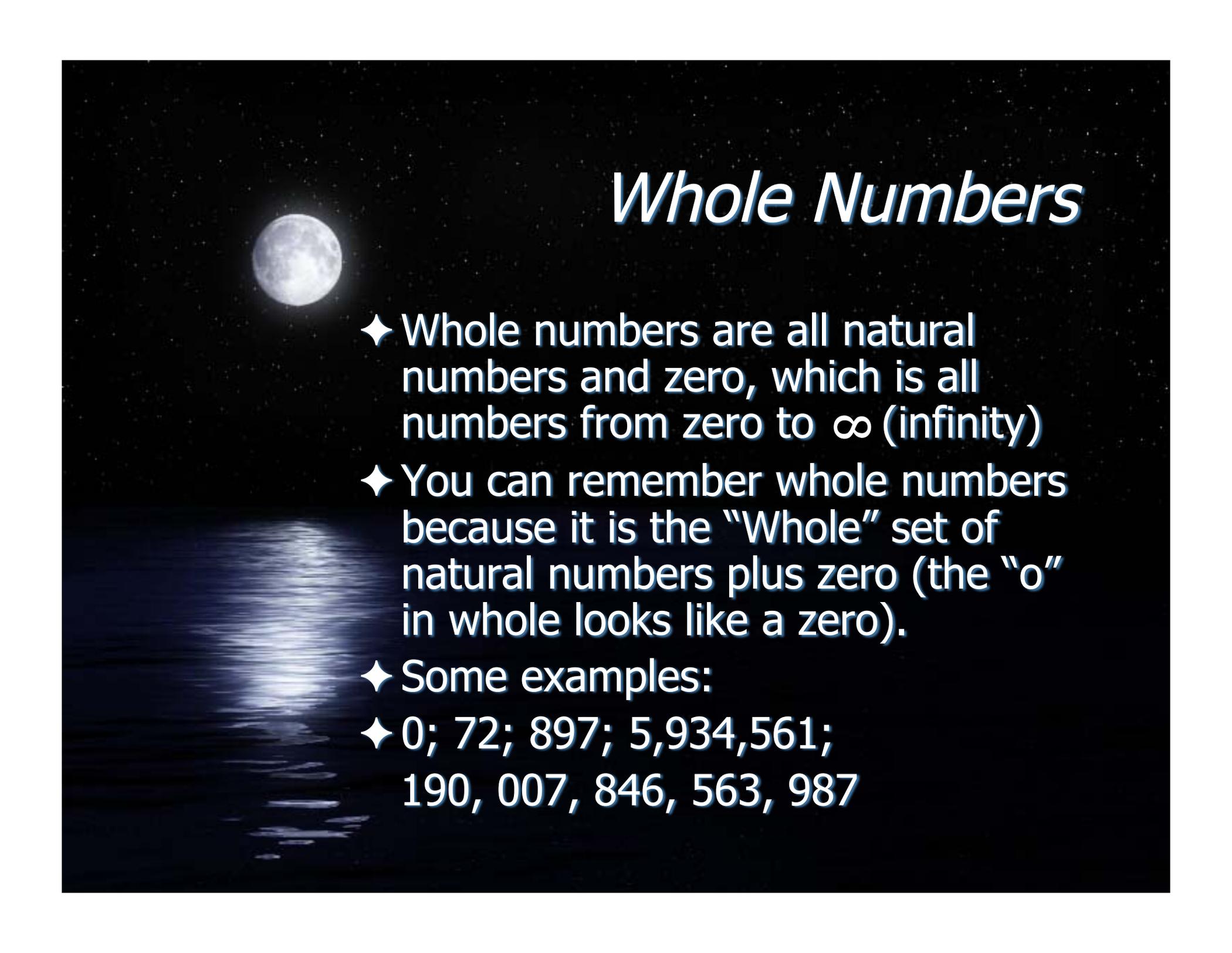
# *Natural Numbers*

- ◆ A natural number is any positive number, all the way from zero to  $\infty$  (infinity)
- ◆ They are also known as counting numbers, when you first learned how to count:
  - ◆ 1,2,3,4,5 .....
  - ◆ Some examples:
  - ◆ 56; 79; 1,239; 1,985,006,523

# *Natural Numbers in everyday life*

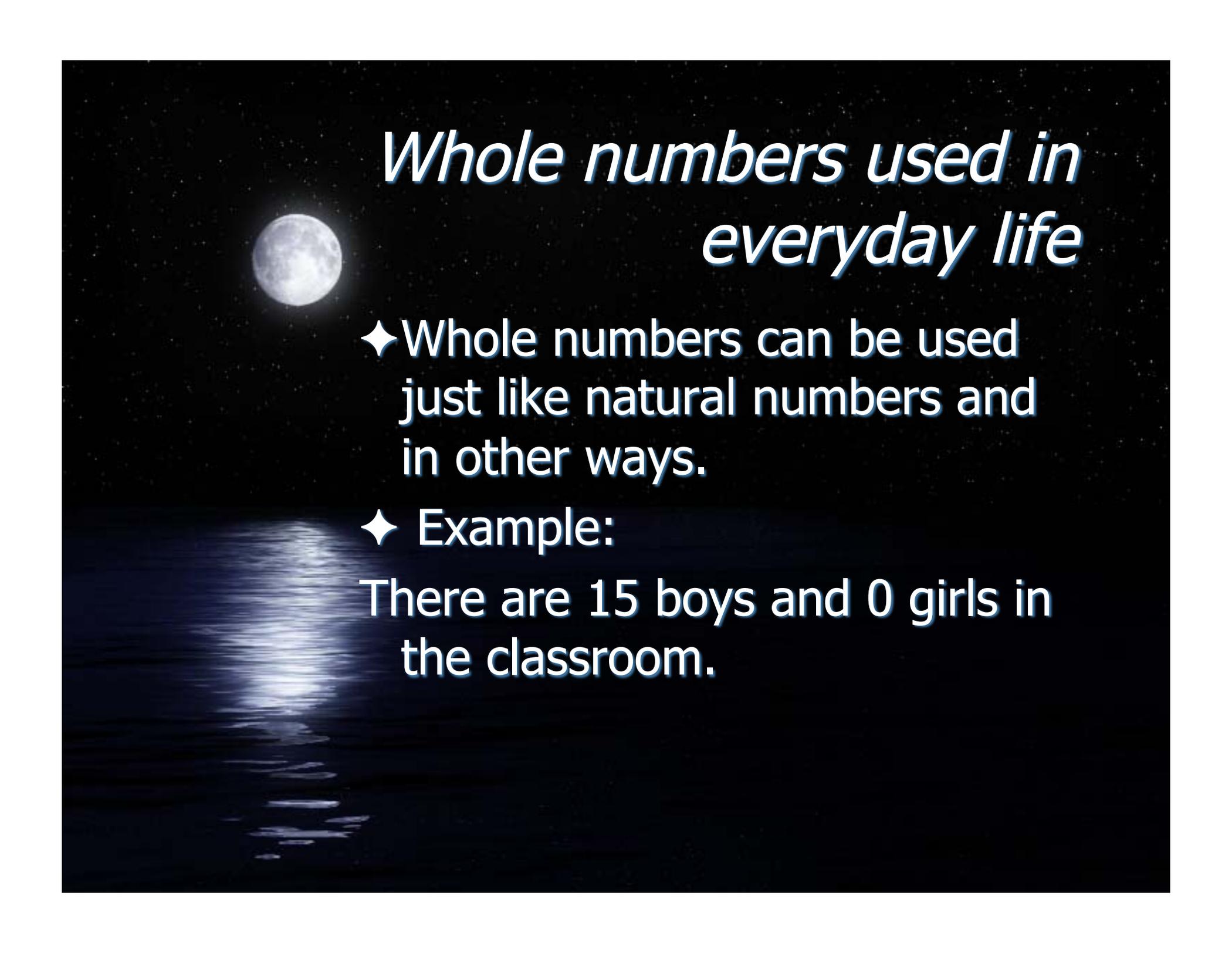
- ◆ Natural - can be used used for finding how much there is of something.
- ◆ Example:



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# *Whole Numbers*

- ◆ Whole numbers are all natural numbers and zero, which is all numbers from zero to  $\infty$  (infinity)
- ◆ You can remember whole numbers because it is the “Whole” set of natural numbers plus zero (the “o” in whole looks like a zero).
- ◆ Some examples:
- ◆ 0; 72; 897; 5,934,561;  
190, 007, 846, 563, 987

A full moon is visible in the upper left quadrant of the image, set against a dark, starry night sky. Below the moon, a body of water reflects the moon's light, creating a shimmering path that leads towards the bottom center of the frame. The overall scene is serene and atmospheric.

## *Whole numbers used in everyday life*

✦ Whole numbers can be used just like natural numbers and in other ways.

✦ Example:

There are 15 boys and 0 girls in the classroom.

# *Integers*

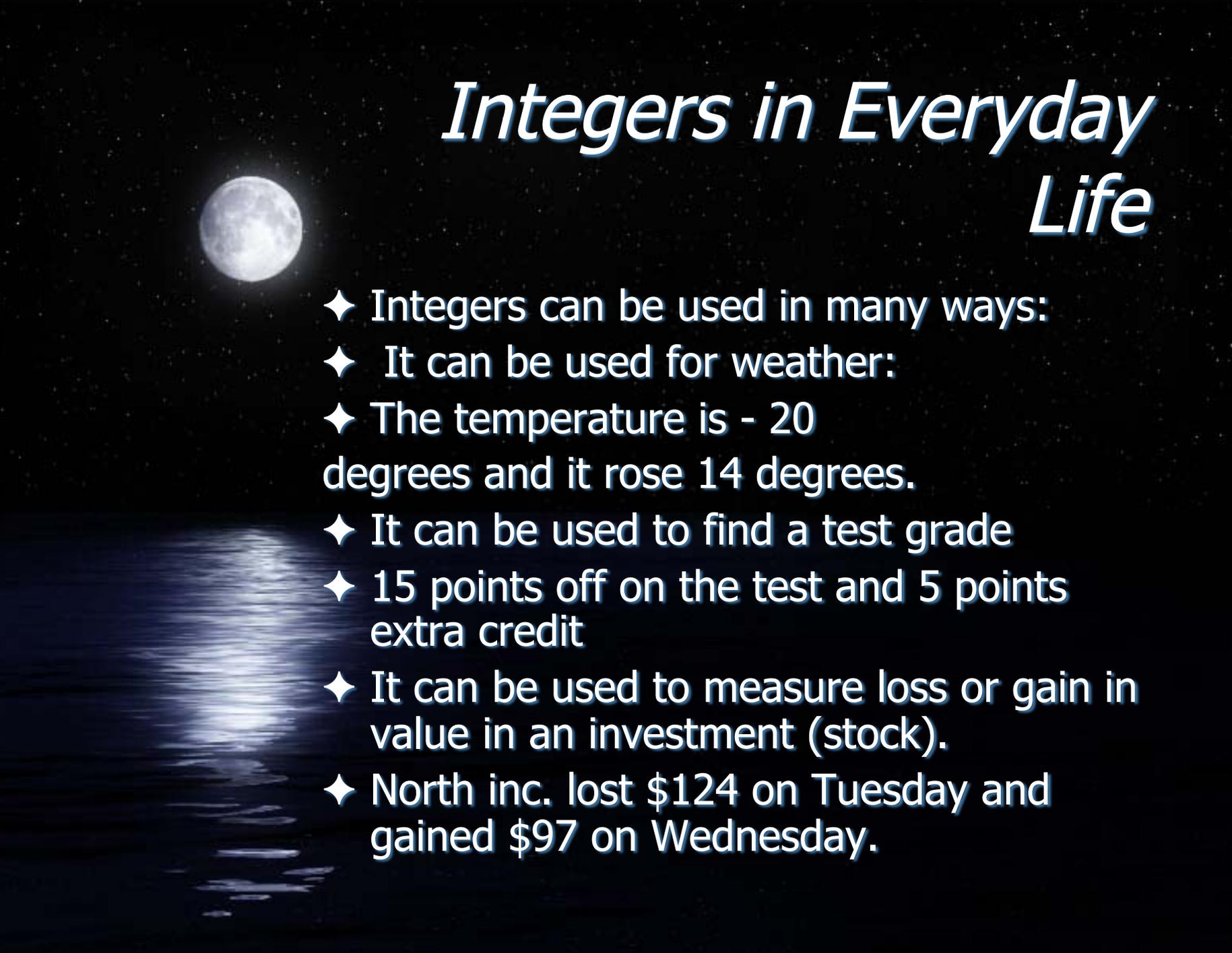


- ◆ Integers are natural numbers and their opposites
- ◆ (ex. 2 and -2)
- ◆ They also include zero
- ◆ Integers can't be decimals!
- ◆ It ranges from  $-\infty$  (negative infinity) to  $\infty$  (positive infinity)
- ◆ Some examples:
  - ◆ -5,897,687,451; -670,000, -17; 22, 567; 876, 567, 809

# *Integers*

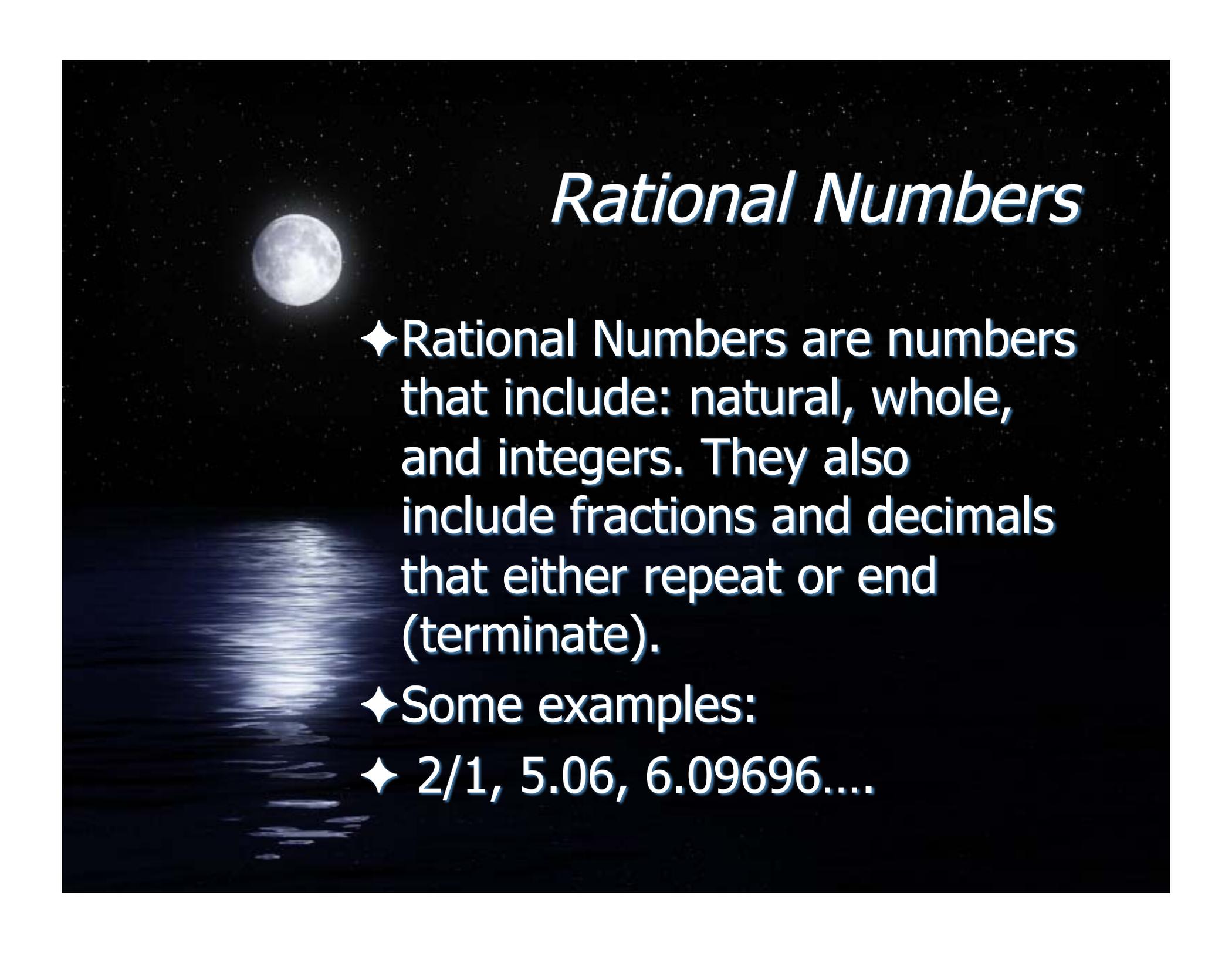
- ◆ With integers, the order of negative numbers are the opposite of positive like:  $-45$  is less than  $-7$  compared to  $45$  is greater than  $7$ .
- ◆ You can use a number line to help you:



A full moon is visible in the upper left quadrant of the slide, set against a dark, starry night sky. Below the moon, a body of water reflects the moon's light, creating a shimmering path that extends towards the bottom center of the slide. The overall background is a deep black with scattered white stars.

# *Integers in Everyday Life*

- ◆ Integers can be used in many ways:
- ◆ It can be used for weather:
- ◆ The temperature is - 20 degrees and it rose 14 degrees.
- ◆ It can be used to find a test grade
- ◆ 15 points off on the test and 5 points extra credit
- ◆ It can be used to measure loss or gain in value in an investment (stock).
- ◆ North inc. lost \$124 on Tuesday and gained \$97 on Wednesday.

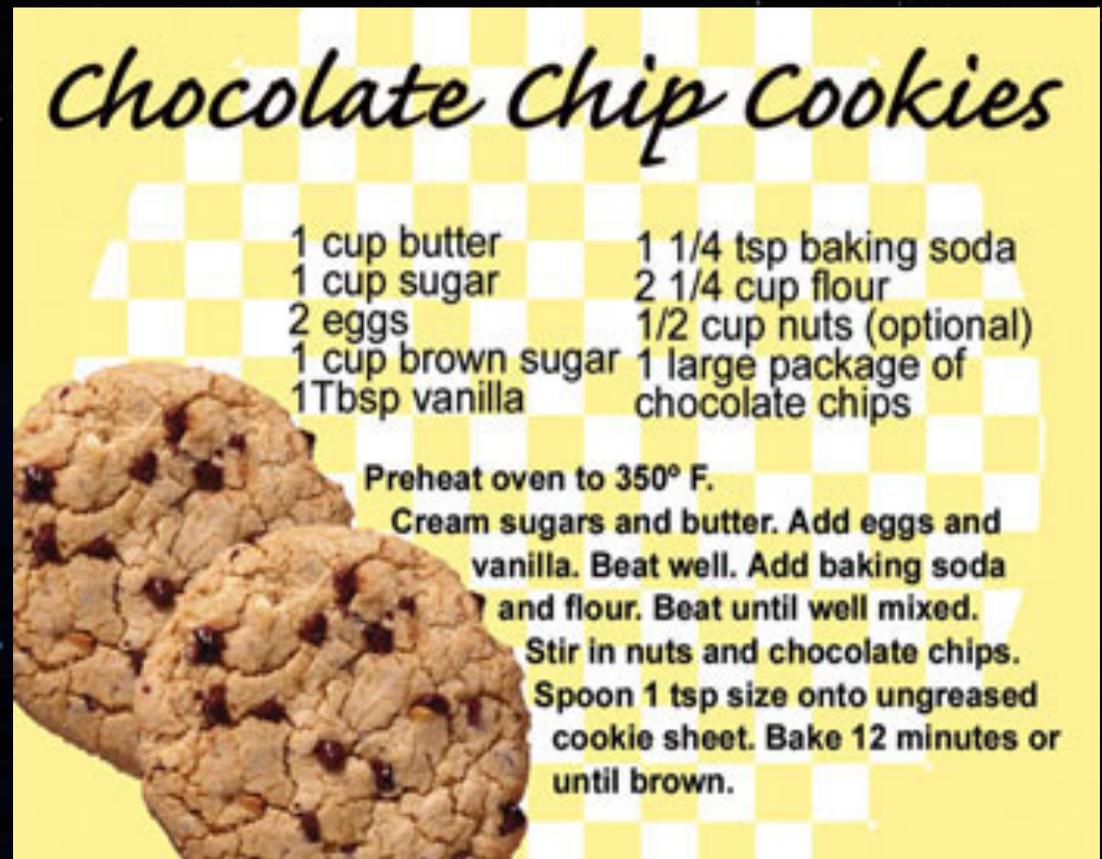
A full moon is visible in the upper left quadrant of the image, set against a dark, starry night sky. Below the moon, a body of water reflects its light, creating a shimmering path that extends towards the bottom center of the frame. The overall scene is serene and atmospheric.

# *Rational Numbers*

- ✦ Rational Numbers are numbers that include: natural, whole, and integers. They also include fractions and decimals that either repeat or end (terminate).
- ✦ Some examples:
- ✦  $2/1$ , 5.06, 6.09696....

# *Rational Numbers in Everyday Life*

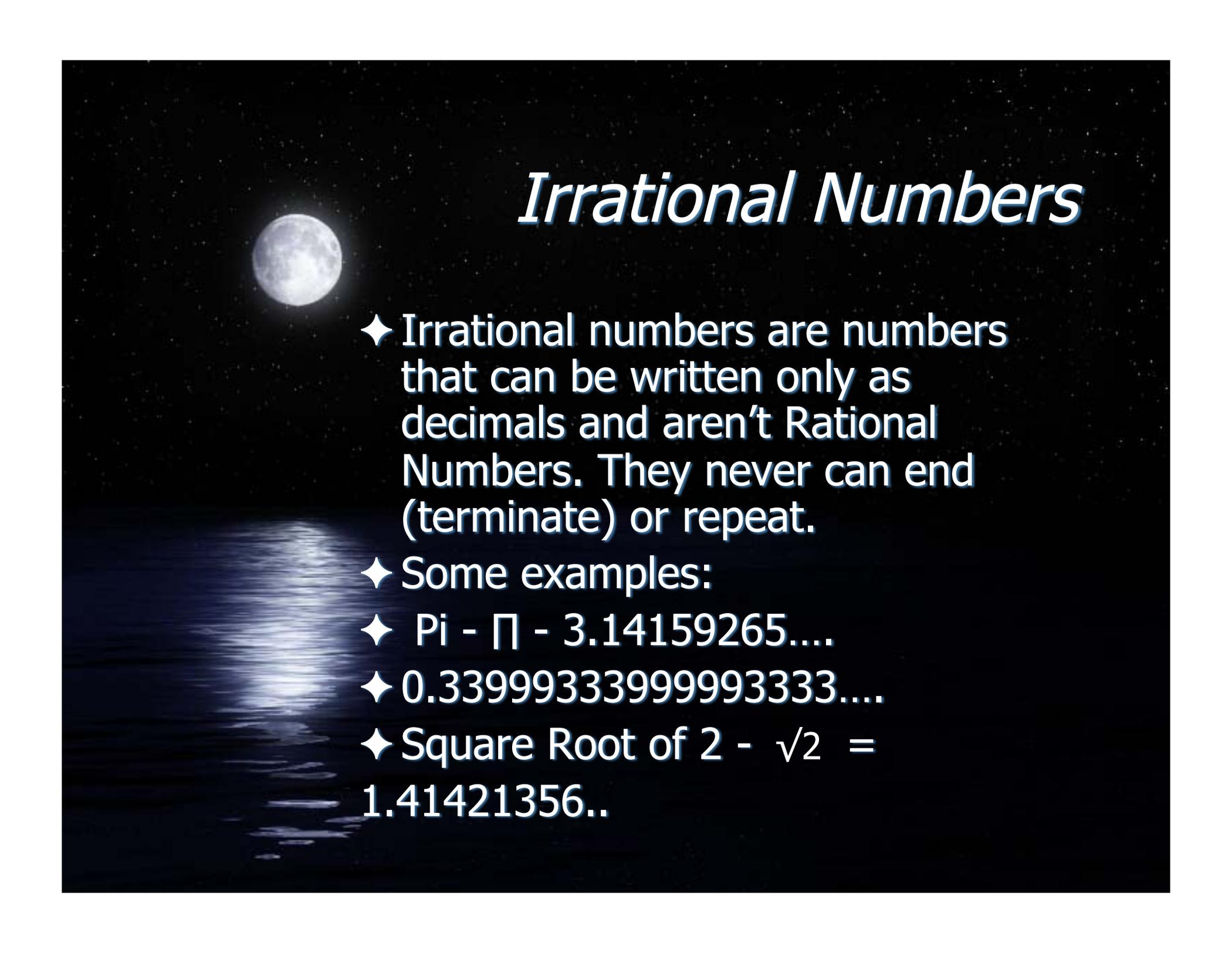
- ✦ A rational number can be used for a recipe
- ✦ For example, this recipe for chocolate chip cookies asks for  $1 \frac{1}{4}$  teaspoons of baking soda,  $2 \frac{1}{4}$  cups of flour, and a  $\frac{1}{2}$  a cup of nuts.



*Chocolate Chip Cookies*

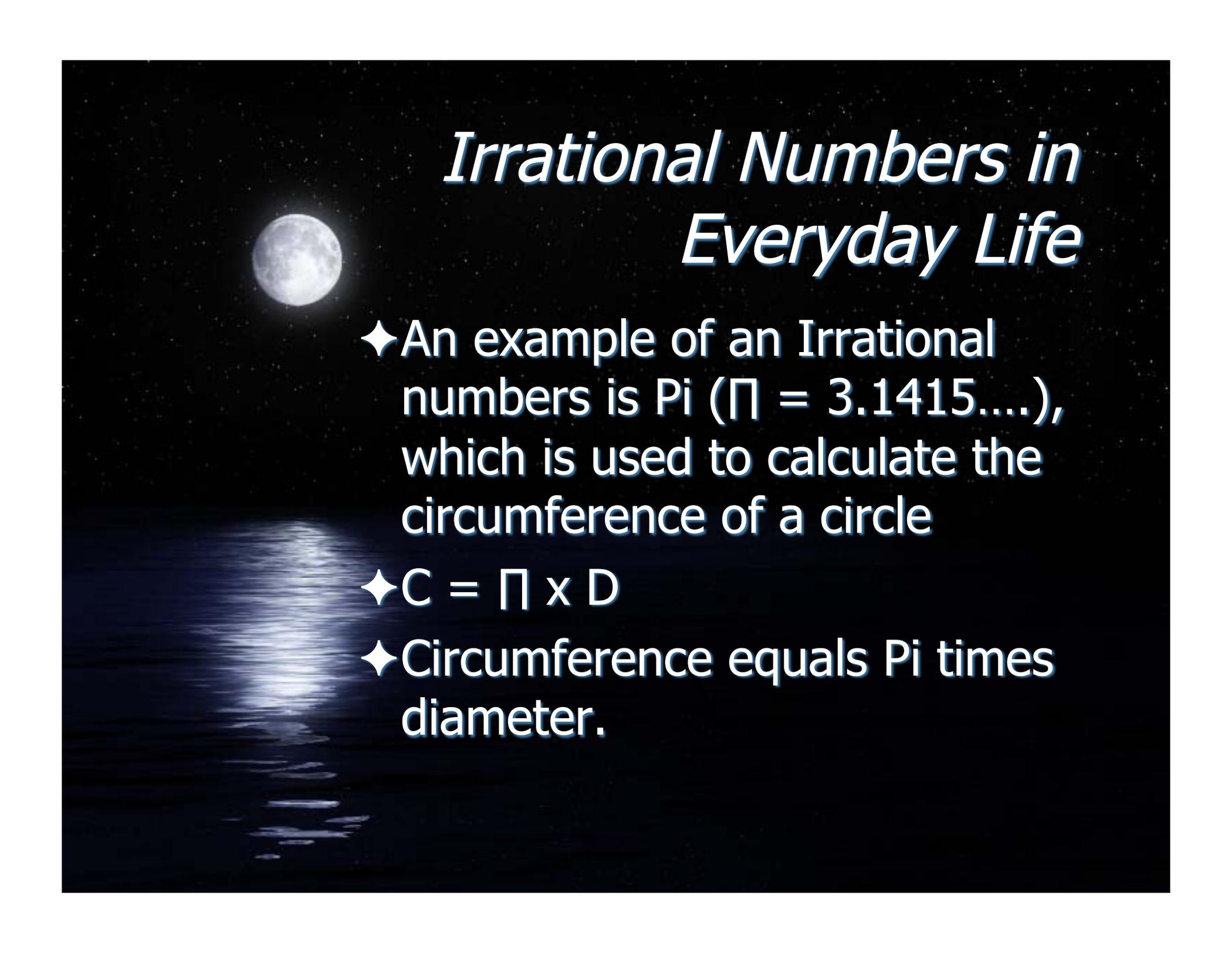
1 cup butter	1 $\frac{1}{4}$ tsp baking soda
1 cup sugar	2 $\frac{1}{4}$ cup flour
2 eggs	$\frac{1}{2}$ cup nuts (optional)
1 cup brown sugar	1 large package of chocolate chips
1 Tbsp vanilla	

Preheat oven to 350° F.  
Cream sugars and butter. Add eggs and vanilla. Beat well. Add baking soda and flour. Beat until well mixed. Stir in nuts and chocolate chips. Spoon 1 tsp size onto ungreased cookie sheet. Bake 12 minutes or until brown.

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# *Irrational Numbers*

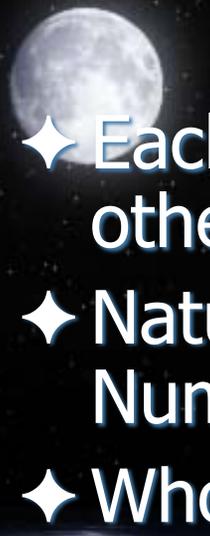
- ◆ Irrational numbers are numbers that can be written only as decimals and aren't Rational Numbers. They never can end (terminate) or repeat.
- ◆ Some examples:
  - ◆ Pi -  $\pi$  - 3.14159265....
  - ◆ 0.33999333999993333....
  - ◆ Square Root of 2 -  $\sqrt{2}$  = 1.41421356..

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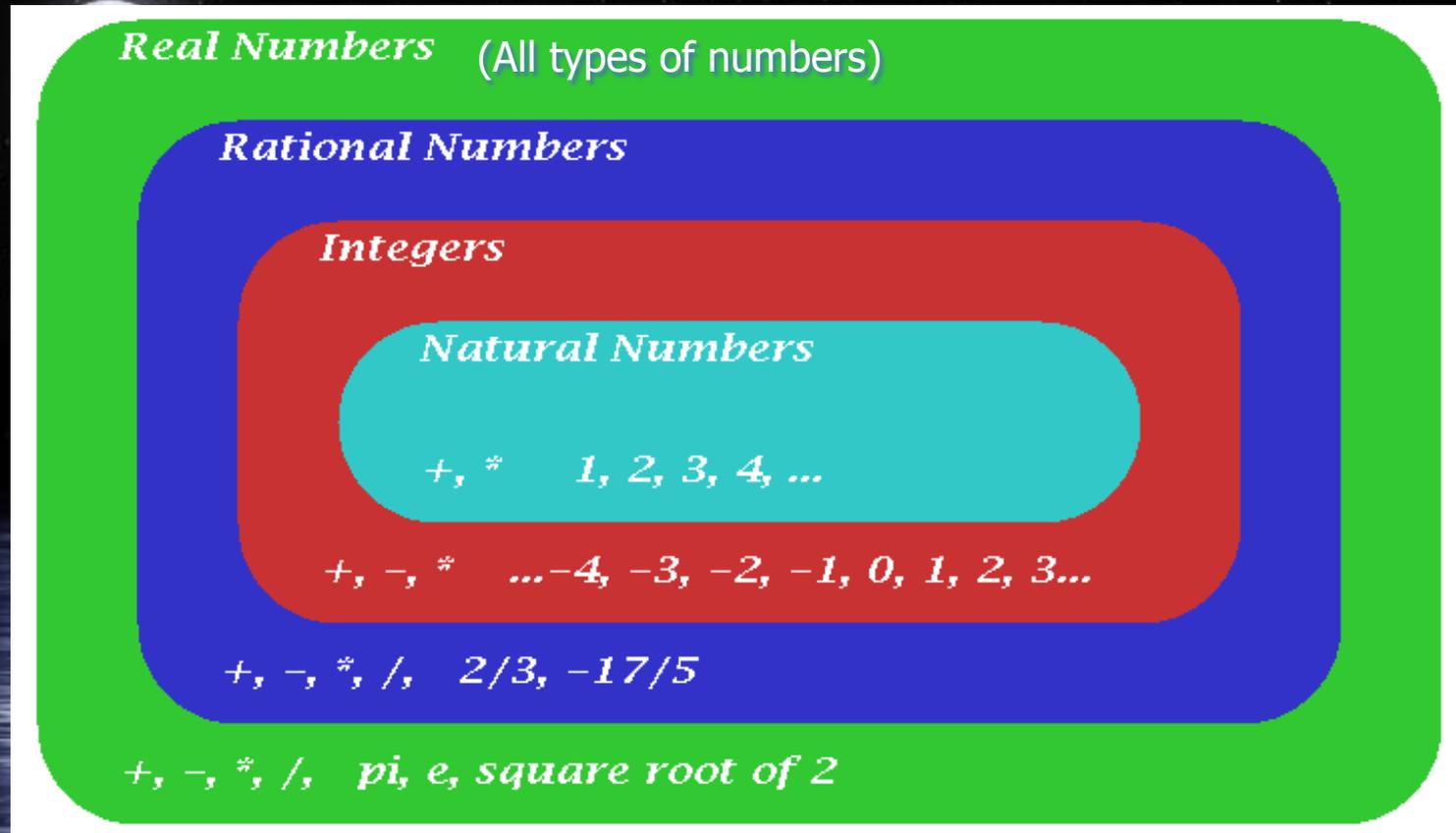
## *Irrational Numbers in Everyday Life*

- ✦ An example of an Irrational number is Pi ( $\pi = 3.1415\dots$ ), which is used to calculate the circumference of a circle
- ✦  $C = \pi \times D$
- ✦ Circumference equals Pi times diameter.

# *Subsets*

- 
- ◆ Each of the numbers are subsets of each other:
  - ◆ Natural Numbers are a subset of Whole Numbers
  - ◆ Whole Numbers are a subset of Integers
  - ◆ Integers are a subset of Rational Numbers
  - ◆ An Irrational Number is totally different from a rational number but is still a real number
  - ◆ All numbers are a subset of Real Numbers

# A way to Remember Types of Numbers



- ✦ Irrational Numbers are real numbers that are not Rational Numbers.



# *What Type of Number is That?*

◆ Below, say what type(s) of number(s) the number is.

◆  $-5/4$

◆ 75

◆ -532

◆  $\pi$

◆ 7.2323...

◆ 5,009,786,867

◆ 9.422442244...