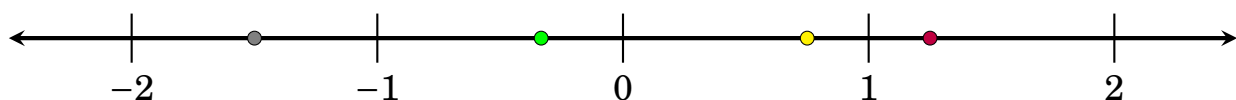


FRACTIONAL VALUES

Recall that **integers** are whole numbers which occur at specific points along a number line. However, there are numbers located between integers.

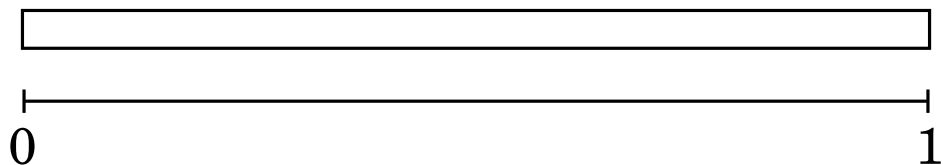
⟨ *How can we describe and write numbers like the ones below?* ⟩



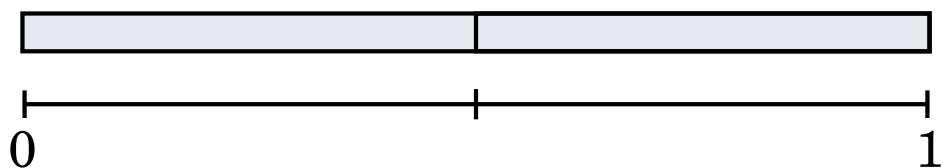
There is another type of number to describe quantities which occur in parts. They are called **fractions**.

SPLITTING THE NUMBER LINE

Consider the space between the integers 0 and 1.

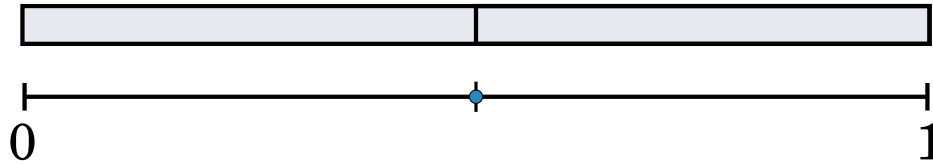


If that distance is divided into **two equal parts**, the line looks like this:

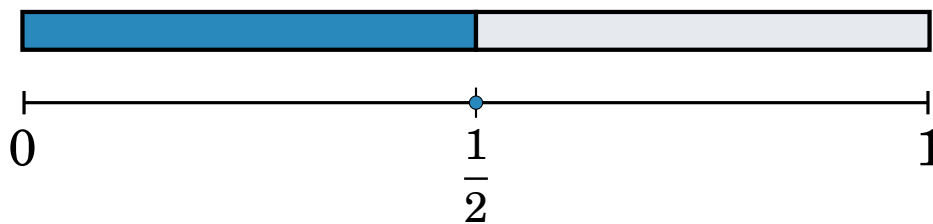


💡 PARTS OF A WHOLE

Consider the number shown below with the **blue point** below.



The number is **1** out of **2** parts away from **0**.



This number is written as $\frac{\text{Number of parts}}{\text{Total number of parts}} = \frac{1}{2}$

NOTATION

The total number of portions is the **numerator**. It is the upper number in the fraction.

$$\frac{\text{numerator}}{\text{denominator}}$$

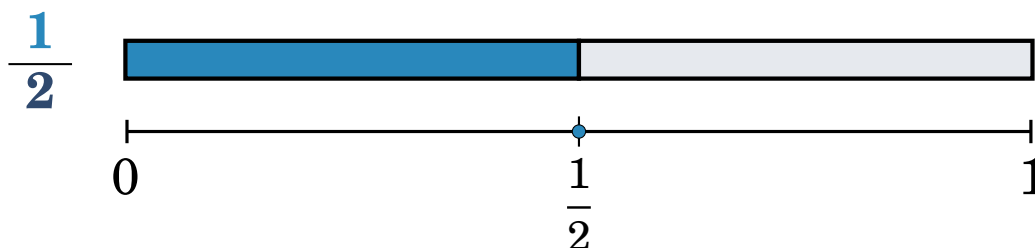
The number of equal parts is the **denominator**. It is the bottom number.

DIVIDING INTO 2 PARTS

When the segment is divided into **two equal parts**, each part is known as a **half**.

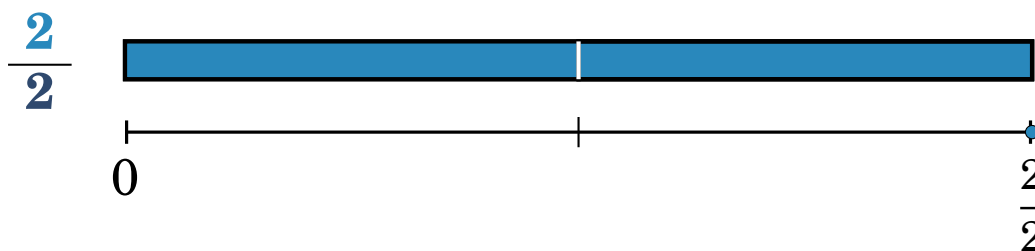
One Half

The point shown below is a distance of **one half** from 0.



Two Halves

The point shown below is a distance of **two halves** from 0.

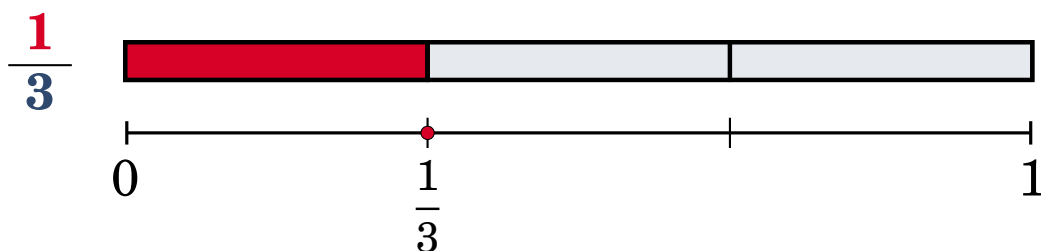


⟨ *What other number does the fraction $\frac{2}{2}$ represent?* ⟩

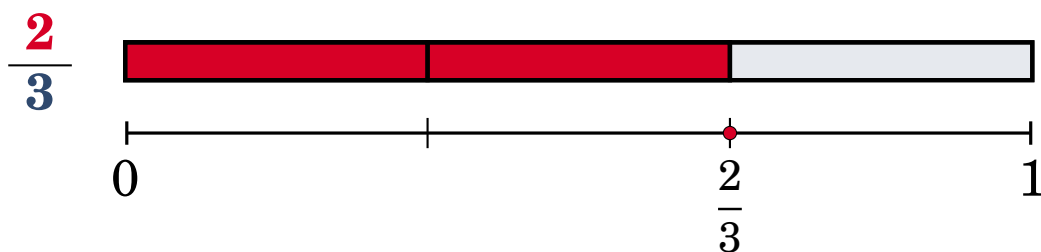
DIVIDING INTO 3 PARTS

Similarly, if the segment between 0 and 1 is divided into **three equal sections**, then we can describe the points below. Each part is known as a **third**.

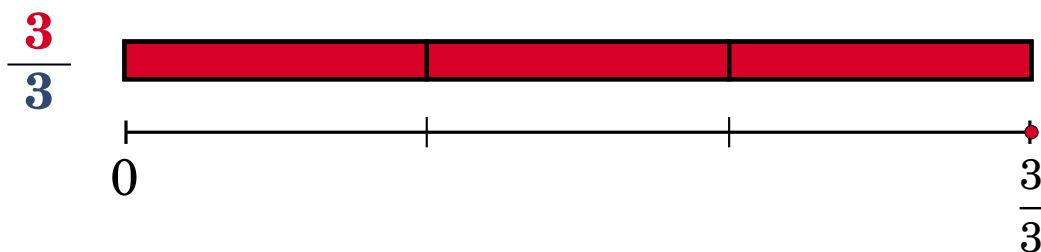
One Third



Two Thirds



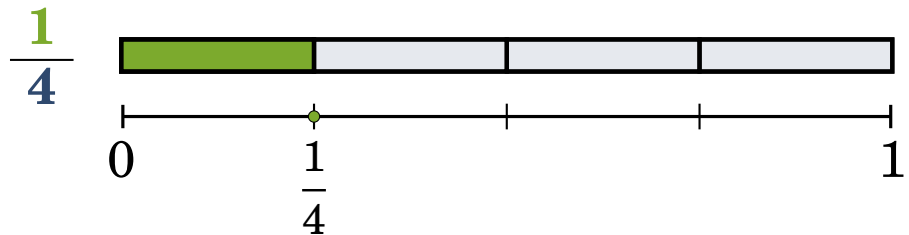
Three Thirds



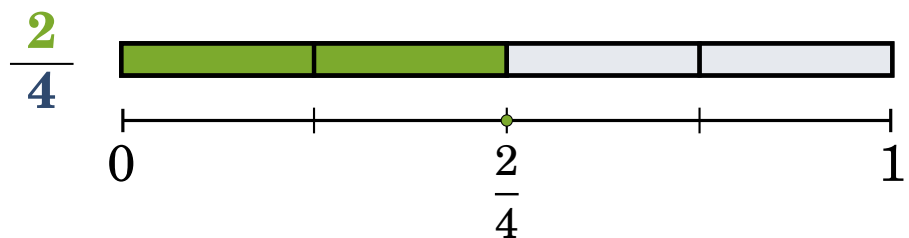
DIVIDING INTO 4 PARTS

If the segment is divided into **four equal sections**, we get the following fractions. Each part is known as a **fourth**.

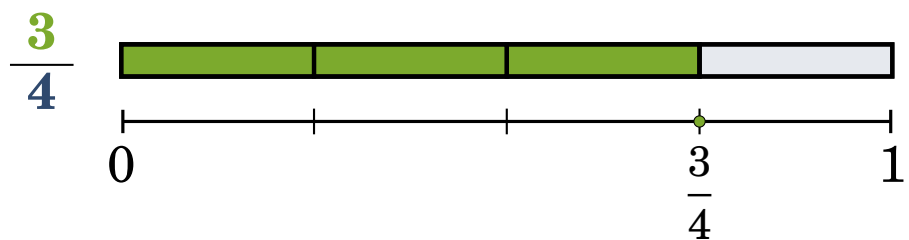
One Fourth



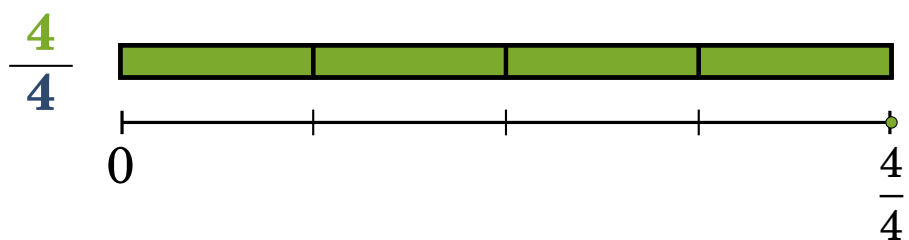
Two Fourths



Three Fourths



Four Fourths

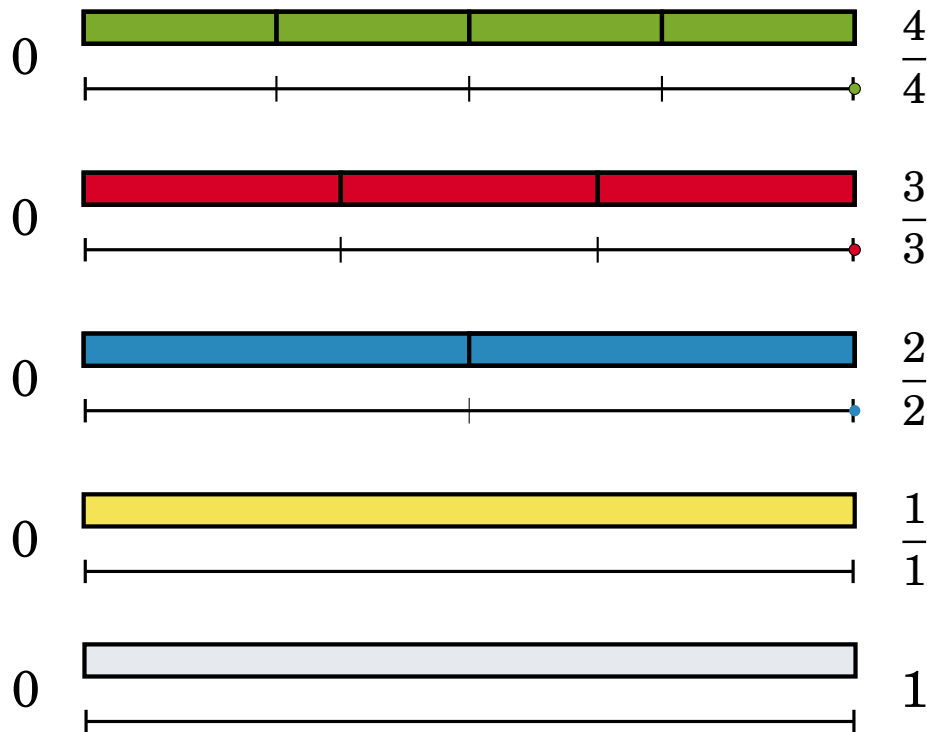


⟨ *What do you observe about the fraction coinciding with 1?* ⟩

EQUIVALENCE

When a fraction represents the same quantity as another number, they are considered **equivalent**.

Consider the following **equivalent** fractions: $1 = \frac{1}{1} = \frac{2}{2} = \frac{3}{3} = \frac{4}{4}$



1 as a fraction

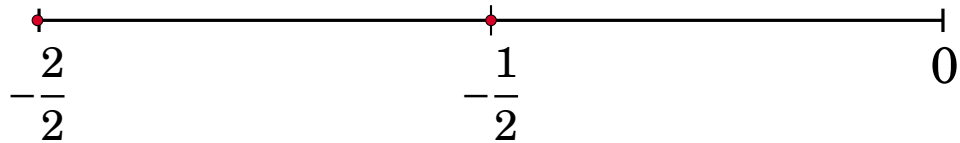
If the **numerator** and **denominator** of a fraction are equal, then that fraction is **equivalent to 1**.

$$\frac{a}{a} = 1$$

Negative Fractions

Recall that there are corresponding negative numbers to the **left of 0**. This holds true for fractional numbers as well.

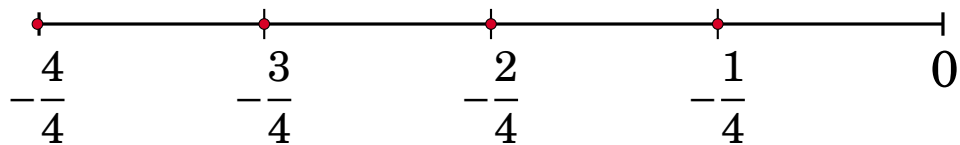
Halves



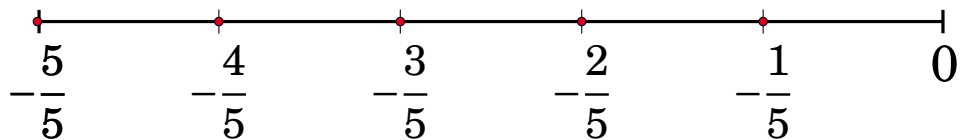
Thirds



Fourths



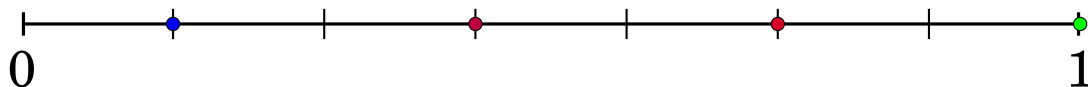
Fifths



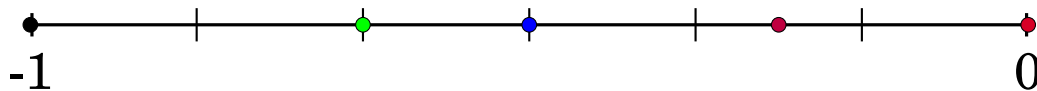
PRACTICE EXERCISES

Directions: Using the number line shown below, write the fraction represented by the given point.

EXERCISE 1: The segment between 0 and 1 is divided into **7 equal parts**.

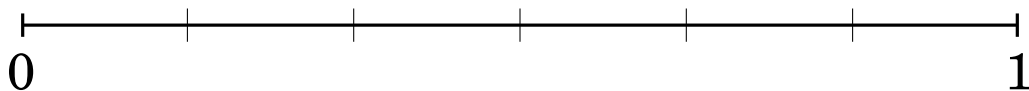


EXERCISE 2: The segment between -1 and 0 is divided into **6 equal parts**.



Directions: Plot and label a point for each fraction. Each number line is divided into an appropriate number of segments.

EXERCISE 3: $\frac{4}{6}$ $\frac{5}{6}$ $\frac{6}{6}$ $\frac{1}{6}$ $\frac{2}{6}$



EXERCISE 4: $-\frac{3}{8}$ $-\frac{4}{8}$ $-\frac{6}{8}$ $-\frac{0}{8}$ $-\frac{8}{8}$

