

Understand Fractions on a Number Line

Name: _____

Prerequisite: How can you place whole numbers on a number line?



Study the example showing points and sections on a number line. Then solve problems 1–6.

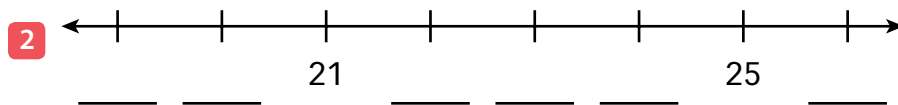
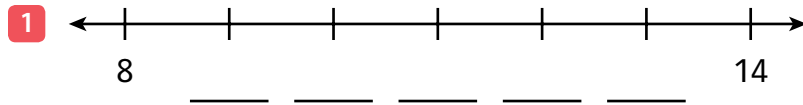
Example



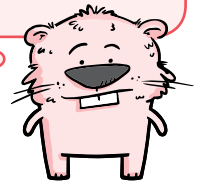
The part of the number line between 0 and 1 shows one whole.

The part of the number line between 3 and 8 shows 5 wholes.

Label the number lines with the missing numbers.

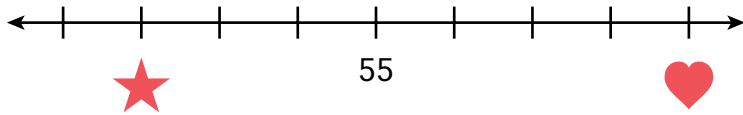


Remember, the numbers on a number line are greater as you move from left to right.



Solve.

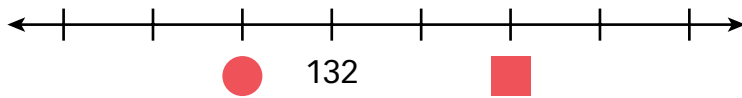
- 3** This number line counts by ones. Write the numbers for the star and the heart.



Star _____

Heart _____

- 4** This number line counts by ones. Write the numbers for the circle and the square.



Circle _____

Square _____

**Some marks are hidden on these number lines.
Estimate. Choose the number marked by the star.**

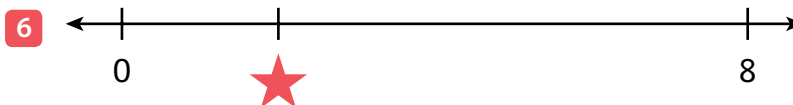


A 1

C 8

B 5

D 2



A 2

C 5

B 4

D 6

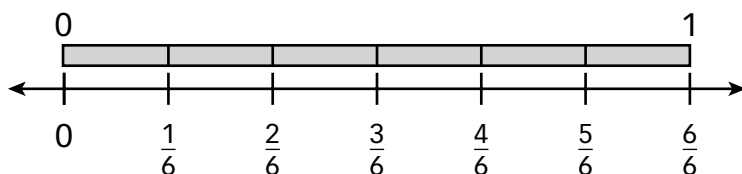
Use Equal Groups on a Number Line to Think About Fractions

Study how the example shows fractions on a number line. Then solve problems 1–12.

Example

The number line shows just the section from 0 to 1.

That is one whole.

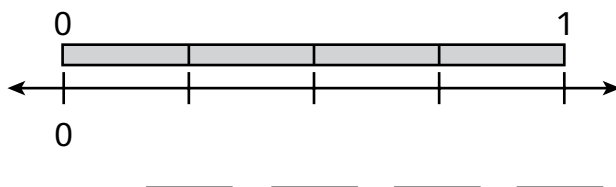


There are 6 equal parts in this section.

Each part is $\frac{1}{6}$ of the whole.

To label the marks, count like you do with whole numbers.

Use this number line to answer problems 1–4.

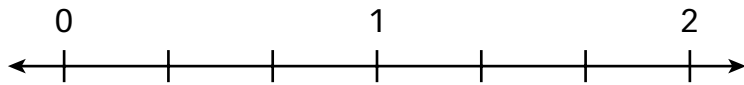


- 1 How many equal parts are there in this whole? _____
- 2 What fraction does each part show? _____
- 3 Label the marks on the number line.
- 4 What is another name for 1? _____

Vocabulary

fraction a number that names part of a whole..

Use this number line to answer problems 5–8.



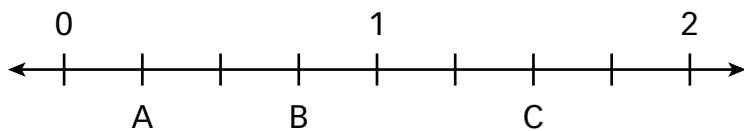
5 How many equal parts are between 0 and 1? _____

6 How many equal parts are between 1 and 2? _____

7 What fraction does each part show? _____

8 Write fractions to label the marks.

Use this number line to answer problems 9–11.

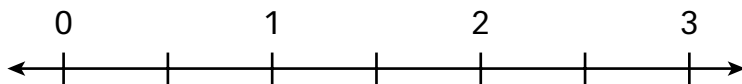


9 A is _____.

10 B is _____.

11 C is _____.

12 Write the fraction $\frac{3}{2}$ where it belongs on this number line.

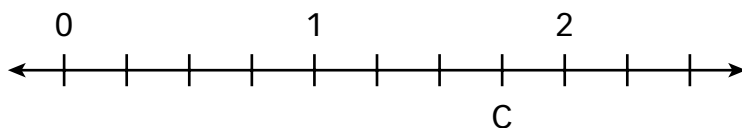


Explain how you knew where to put $\frac{3}{2}$.

Reason and Write

Study the example problem. Underline two parts that you think make it a particularly good answer and a helpful example.

Example



Peter said, "The fraction for point **C** is $\frac{3}{4}$."

Steve said, "The fraction for point **C** is $\frac{7}{4}$."

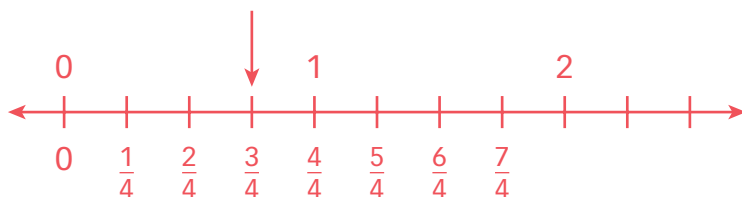
Who is right? How did you decide?

Who is wrong? What is the mistake?

Show your work. Use pictures, words, or numbers to explain how you decided what to draw.

Peter's answer is wrong. Peter saw that each whole is separated into 4 equal parts. So he knows that the denominator of the fractions is 4 and he has to count fourths.

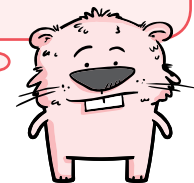
Peter's mistake was he started counting fourths at 1 instead of at 0. The point for $\frac{3}{4}$ is closer to 0, where I drew it below.



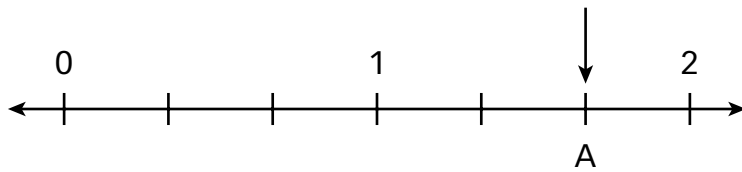
Steve was right. He knew that the denominator is 4 and he has to count fourths. He started counting with 0. From 0 to C there are 7 fourths. The fraction for point C is $\frac{7}{4}$.

Where does the example...

- use a picture to explain?
- use numbers to explain?
- use words to explain?
- give details?



Solve the problem. Use what you learned from the example.



Jackie said that the fraction for point **A** is $\frac{5}{6}$.

Ann said that the fraction for point **A** is $\frac{5}{3}$.

Who is right? Tell how you know.

Who is wrong? What is the mistake?

Show your work. Use pictures, words, or numbers to explain how you decided what to draw.

Did you ...

- use a picture to explain?
- use numbers to explain?
- use words to explain?
- give details?

