Fractions on a Number Line

Spot mistakes, reason, and work backward

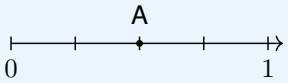
Name _____ **Date** _____ **Score** _____ / 6

QUICK REVIEW

Fractions are numbers with exact positions. If 0 to 1 has 4 equal intervals, each is $\frac{1}{4}$. The third interval ends at $\frac{3}{4}$; the fifth ends at $\frac{5}{4}$, between 1 and 2. Count spaces, not the tick marks.

Worked example

Name the number at point A. Count equal intervals, not tick marks.

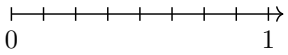


1. Each whole from 0 to 1 has 4 equal intervals, so each interval is $\frac{1}{4}$.
2. A is 2 intervals from 0, giving $2 \times \frac{1}{4} = \frac{2}{4}$.
Answer: $A = \frac{2}{4}$.

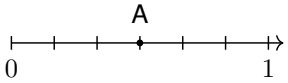
Practice Problems

Show your thinking.

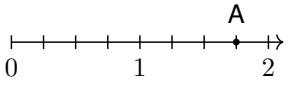
1. Jo counts the 9 tick marks from 0 to 1 and says each step is $\frac{1}{9}$. Correct the step size.



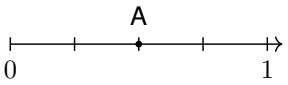
2. A is at $\frac{3}{6}$ and is 3 equal steps from 0. How many equal steps make one whole? Label one step.



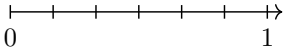
3. A student labels A as $\frac{7}{8}$ by calling the entire 0-to-2 line one whole. Correct A using the unit from 0 to 1.



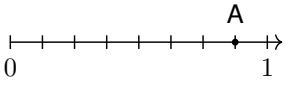
4. A is at $\frac{2}{4}$ and is 2 equal steps from 0. How many equal steps make one whole? Label one step.



5. Place a dot at $\frac{5}{6}$ and label it P on this line.



6. Point A is shown. Name A, then find the distance from $\frac{1}{2}$ to A in small intervals and as a fraction.



Answer Key

1. Each step is $\frac{1}{8}$.
2. 6 steps; one step is $\frac{1}{6}$.
3. $A = \frac{7}{4}$.
4. 4 steps; one step is $\frac{1}{4}$.
5. P is at tick 5 after 0, at $\frac{5}{6}$.
6. $A = \frac{7}{8}$; 3 intervals, or $\frac{3}{8}$.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. 9 tick marks enclose only 8 spaces between 0 and 1.

2. One whole divided into 8 equal spaces gives $\frac{1}{8}$ per step, not $\frac{1}{9}$.

Problem 2

1. The numerator 3 counts the 3 steps from 0 to A.

2. The denominator 6 counts steps in one whole, so each step is $\frac{1}{6}$; $6 \times \frac{1}{6} = 1$.

Problem 3

1. The whole unit is 0 to 1, which has 4 equal spaces. The full line has $2 \times 4 = 8$ spaces but represents two wholes.

2. A is 7 steps from 0, each $\frac{1}{4}$, so $A = \frac{7}{4}$, not $\frac{7}{8}$.

Problem 4

1. The numerator 2 counts the 2 steps from 0 to A.

2. The denominator 4 counts steps in one whole, so each step is $\frac{1}{4}$; $4 \times \frac{1}{4} = 1$.

Problem 5

1. The unit interval is divided into 6 equal lengths, each $\frac{1}{6}$.

2. Count 5 of those lengths from 0: $5 \times \frac{1}{6} = \frac{5}{6}$. Put P there.

Problem 6

1. There are 8 intervals in one whole; A is at interval 7, so $A = \frac{7}{8}$. Halfway is interval 4.

2. The distance is $7 - 4 = 3$ intervals of size $\frac{1}{8}$, or $\frac{3}{8}$.

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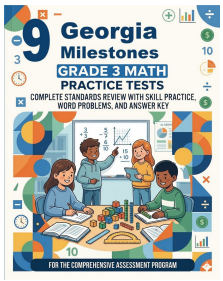

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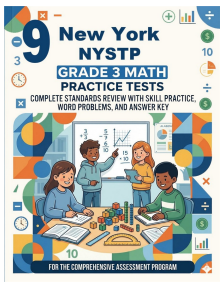

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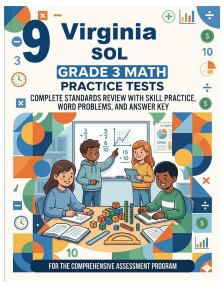

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