Representing a/b on a Number Line

Apply the skill to decisions and designs

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

QUICK REVIEW

For $\frac{a}{b}$, the denominator gives the equal parts per whole, and the numerator counts jumps from 0. When the numerator exceeds the denominator, continue past 1 with the same jump length.

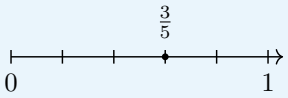
Worked example

Partition the line into 5 equal lengths per whole. Show 3 jumps of $\frac{1}{5}$ to locate $\frac{3}{5}$.

1. Mark 5 equal intervals per whole along 0 to 1. Each jump is $\frac{1}{5}$.

2. Count 3 intervals right from 0: $3 \times \frac{1}{5} = \frac{3}{5}$.

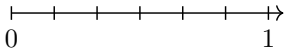
Answer: End at $\frac{3}{5}$, after 3 jumps.



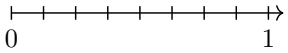
Practice Problems

Show your thinking.

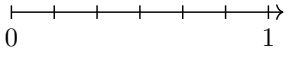
1. A game piece is at $\frac{2}{6}$. It moves one jump of $\frac{1}{6}$ forward. Mark the start and finish.



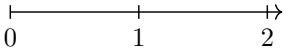
2. A runner has reached $\frac{5}{8}$ of a one-kilometer route. Mark the point and count the $\frac{1}{8}$-km steps still needed.



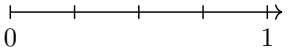
3. A game piece is at $\frac{4}{6}$. It moves one jump of $\frac{1}{6}$ forward. Mark the start and finish.



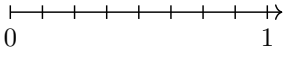
4. Partition the line into 3 equal lengths per whole. Show 5 jumps of $\frac{1}{3}$ to locate $\frac{5}{3}$.



5. A runner has reached $\frac{3}{4}$ of a one-kilometer route. Mark the point and count the $\frac{1}{4}$-km steps still needed.



6. A robot starts at 0 and jumps right by $\frac{1}{8}$ each time until it reaches $\frac{7}{8}$. Draw its jumps and count them.



Answer Key

1. Start $\frac{2}{6}$; finish $\frac{3}{6}$.
2. 3 steps; $\frac{3}{8}$ km remain.
3. Start $\frac{4}{6}$; finish $\frac{5}{6}$.
4. End at $\frac{5}{3}$, after 5 jumps.
5. 1 steps; $\frac{1}{4}$ km remain.
6. 7 jumps.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. The start is 2 unit-fraction jumps from 0. One more makes $2 + 1 = 3$ jumps.

2. The new distance is $\frac{2}{6} + \frac{1}{6} = \frac{3}{6}$.

Problem 2

1. The whole route contains 8 equal steps; the runner has taken 5.

2. $8 - 5 = 3$ steps remain, a distance of $3 \times \frac{1}{8} = \frac{3}{8}$ km.

Problem 3

1. The start is 4 unit-fraction jumps from 0. One more makes $4 + 1 = 5$ jumps.

2. The new distance is $\frac{4}{6} + \frac{1}{6} = \frac{5}{6}$.

Problem 4

1. Mark 3 equal intervals per whole along both 0 to 1 and 1 to 2. Each jump is $\frac{1}{3}$.

2. Count 5 intervals right from 0: $5 \times \frac{1}{3} = \frac{5}{3}$. After 3 jumps you reach 1, then 2 more reach $\frac{5}{3}$.

Problem 5

1. The whole route contains 4 equal steps; the runner has taken 3.

2. $4 - 3 = 1$ steps remain, a distance of $1 \times \frac{1}{4} = \frac{1}{4}$ km.

Problem 6

1. One jump moves across one interval of size $\frac{1}{8}$.

2. Start at 0 and land at $\frac{1}{8}, \frac{2}{8}, \frac{3}{8}, \frac{4}{8}, \frac{5}{8}, \frac{6}{8}, \frac{7}{8}$ in order. There are 7 jumps to $\frac{7}{8}$.

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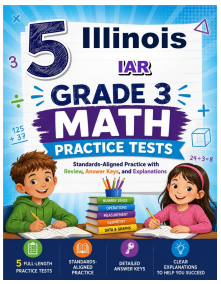

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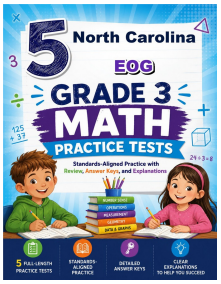

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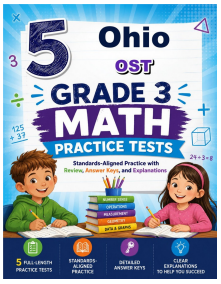

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