

Number Line Moves

Use jumps to add and subtract rational numbers.

GRADE 7 • 7.NR.1.3

7.NR.1.3 "Represent addition and subtraction with rational numbers on a horizontal or a vertical number line diagram to solve authentic problems."

NAME _____

DATE _____

JUMP WITH PURPOSE

On a horizontal number line, move right to add a positive number and move left to add a negative number. To subtract a number, add its opposite, then show each move as a jump from your starting point.

WORKED EXAMPLE

Use a horizontal number line to find $7/10 + (-3/10)$.

1. Start at $7/10$.
2. Adding $-3/10$ means move left $3/10$.
3. $7/10 - 3/10 = 4/10$.
4. Simplify $4/10$ to $2/5$.

Answer: $2/5$

PRACTICE 6 problems

- 1** Draw a horizontal number line. Start at $-3/4$ and add $1/4$. Where do you land?

ANSWER _____

- 2** Draw a vertical number line. Start at $5/6$ and add $-1/3$. Where do you land?

ANSWER _____

- 3** Draw a horizontal number line. Find $-2/3 - 1/6$ by showing jumps.

ANSWER _____

- 4** Draw a vertical number line. Find $1\frac{1}{4} - 2\frac{3}{4}$ by showing jumps.

ANSWER _____

- 5** Draw a horizontal number line. Start at $-1\frac{3}{8}$ and add $7/8$. Where do you land?

ANSWER _____

- 6** Draw a vertical number line. Find $2\frac{1}{3} + (-1\frac{5}{6})$ by showing jumps.

ANSWER _____

APPLY IT Show your work

- 1** During a video game tournament, Maya's score is $-3 \frac{1}{4}$ after a penalty. She then earns $4 \frac{1}{2}$ points. Draw a number line to show the change. What is her new score?

WORK SPACE

ANSWER _____

- 2** A skater starts $1 \frac{3}{4}$ miles east of a park. She travels $2 \frac{2}{3}$ miles west. Use a number line with east as positive to find her final position compared with the park.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A robot starts at $-2 \frac{1}{4}$ on a horizontal number line. It moves right $1 \frac{5}{6}$, then moves left $\frac{3}{4}$. Find its final position and explain the jumps in exactly 2 sentences.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Draw a horizontal number line. Start at $-\frac{3}{4}$ and add $\frac{1}{4}$. Where do you land?	$-\frac{1}{2}$
2	Draw a vertical number line. Start at $\frac{5}{6}$ and add $-\frac{1}{3}$. Where do you land?	$\frac{1}{2}$
3	Draw a horizontal number line. Find $-\frac{2}{3} - \frac{1}{6}$ by showing jumps.	$-\frac{5}{6}$
4	Draw a vertical number line. Find $1\frac{1}{4} - 2\frac{3}{4}$ by showing jumps.	$-1\frac{1}{2}$
5	Draw a horizontal number line. Start at $-1\frac{3}{8}$ and add $\frac{7}{8}$. Where do you land?	$-\frac{1}{2}$
6	Draw a vertical number line. Find $2\frac{1}{3} + (-1\frac{5}{6})$ by showing jumps.	$\frac{1}{2}$

PART 2 • APPLY IT

- $1\frac{1}{4}$ points** Start at $-3\frac{1}{4}$ and move right $4\frac{1}{2}$. The landing point is $1\frac{1}{4}$.
- $-\frac{11}{12}$ mile, or $\frac{11}{12}$ mile west of the park** Start at $1\frac{3}{4}$ and move left $2\frac{2}{3}$. The landing point is $-\frac{11}{12}$, which is west of the park.

CHALLENGE

Start at $-2\frac{1}{4}$, move right $1\frac{5}{6}$, and then move left $\frac{3}{4}$. Landing at $-1\frac{1}{6}$ means the final position is $1\frac{1}{6}$ units left of 0.

Accept equivalent simplified fractions and mixed numbers where appropriate. Students should show a number line with a starting point and correctly directed jumps, even if the line is not drawn to scale.