

Number Line Moves

Add rational numbers by tracking distance and direction.

GRADE 7 • 7.NS.A.1b

CCSS.Math.Content.7.NS.A.1b "Understand $p + q$ as the number located a distance $|q|$ from p , in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses)..."

NAME _____

DATE _____

MOVE FROM P

To find $p + q$, start at p and move $|q|$ units. Move in the positive direction when q is positive and in the negative direction when q is negative. A number and its opposite always make 0.

WORKED EXAMPLE

Find $-6 + 11$.

1. Start at -6 .
2. Because 11 is positive, move 11 units in the positive direction.
3. $-6 + 11 = 5$.

Answer: 5

PRACTICE 6 problems

1 Find $3 + (-10)$.

ANSWER _____

2 Start at -15 and add $+8$. What number do you reach?

ANSWER _____

3 Find $-2/3 + 2/3$.

ANSWER _____

4 Find $7/12 + (-1/3)$.

ANSWER _____

5 What is the additive inverse of -13 ?

ANSWER _____

6 Find $4 \frac{1}{2} + (-2 \frac{1}{4})$.

ANSWER _____

APPLY IT Show your work

- 1** In an online game, Jordan's score is $-3 \frac{1}{2}$ points after a penalty. Jordan earns $7 \frac{1}{4}$ points in the next level. Write the sum and find Jordan's new score.

WORK SPACE

ANSWER _____

- 2** In a diving game, a character begins $2 \frac{1}{4}$ meters above sea level and then moves $3 \frac{3}{4}$ meters downward. Write the sum and find the character's final location.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A robot starts at $-1 \frac{2}{3}$. It moves $\frac{3}{4}$ unit in the positive direction and then $1 \frac{1}{8}$ units in the negative direction. Where does it end? Explain how each signed number tells direction and distance.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Find $3 + (-10)$.	-7
2	Start at -15 and add +8. What number do you reach?	-7
3	Find $-2/3 + 2/3$.	0
4	Find $7/12 + (-1/3)$.	1/4
5	What is the additive inverse of -13?	13
6	Find $4\frac{1}{2} + (-2\frac{1}{4})$.	2 $\frac{1}{4}$

PART 2 • APPLY IT

1. **$-3\frac{1}{2} + 7\frac{1}{4} = 3\frac{3}{4}$ points** The positive point gain is greater than the penalty. Add the signed scores to get $3\frac{3}{4}$ points.
2. **$2\frac{1}{4} + (-3\frac{3}{4}) = -1\frac{1}{2}$ meters, or $1\frac{1}{2}$ meters below sea level** Moving downward is represented by a negative number. The negative sum means the character ends below sea level.

CHALLENGE

$-2\frac{1}{24}$. The robot starts $1\frac{2}{3}$ units left of 0, moves right $\frac{3}{4}$ unit, then moves left $1\frac{1}{8}$ units.

Accept equivalent improper fractions or mixed numbers. For explanations, accept descriptions of positive movement as right or up and negative movement as left or down.