

Number Line Gaps

Subtract rational numbers and measure the space between them.

GRADE 7 • 7.NS.A.1c

CCSS.Math.Content.7.NS.A.1c "Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference..."

NAME _____

DATE _____

SUBTRACT AND MEASURE

To subtract a rational number, add its opposite: $p - q = p + (-q)$. The distance between two numbers is always positive, so find the absolute value of their difference.

WORKED EXAMPLE

Find $1/4 - (-2/3)$.

1. Rewrite subtraction as addition: $1/4 + 2/3$
2. Use denominator 12: $3/12 + 8/12$
3. Add: $11/12$

Answer: 11/12

PRACTICE 6 problems

1 Compute: $-5/8 - 3/8$.

ANSWER _____

2 Compute: $7/9 - (-4/9)$.

ANSWER _____

3 Compute: $-1.2 - 0.7$.

ANSWER _____

4 Compute: $2.5 - (-3.6)$.

ANSWER _____

5 Find the distance between $-7/10$ and $3/5$ on a number line.

ANSWER _____

6 Find the distance between $-2 \frac{1}{5}$ and $-7/10$ on a number line.

ANSWER _____

APPLY IT Show your work

- 1** On a gaming map, Kai's character is at $-3\frac{1}{2}$ and Rowan's character is at $2\frac{1}{5}$ on a straight path. How far apart are the characters?

WORK SPACE

ANSWER _____

- 2** Before outdoor practice, the temperature is -4.8°C . By practice time, the temperature is 1.6°C . How many degrees warmer is it?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A number x is $2\frac{3}{5}$ units from $-1\frac{1}{5}$ on a number line. Find both possible values of x . Explain how you found them.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Compute: $-5/8 - 3/8$.	-1
2	Compute: $7/9 - (-4/9)$.	1 2/9
3	Compute: $-1.2 - 0.7$.	-1.9
4	Compute: $2.5 - (-3.6)$.	6.1
5	Find the distance between $-7/10$ and $3/5$ on a number line.	13/10
6	Find the distance between $-2 \frac{1}{5}$ and $-7/10$ on a number line.	3/2

PART 2 • APPLY IT

- 5 7/10 units** Find the absolute value of the difference: $|2 \frac{1}{5} - (-3 \frac{1}{2})| = 5 \frac{7}{10}$. The characters are $5 \frac{7}{10}$ units apart.
- 6.4°C** Subtract the earlier temperature from the later temperature: $1.6 - (-4.8) = 6.4$. The temperature is 6.4°C warmer.

CHALLENGE

$x = 1 \frac{2}{5}$ or $x = -3 \frac{4}{5}$. Starting at $-1 \frac{1}{5}$, move $2 \frac{3}{5}$ units right or $2 \frac{3}{5}$ units left.

Accept equivalent fractions and mixed numbers, such as $11/9$ for $1 \frac{2}{9}$ and $13/10$ for the first distance problem. Distance answers must be nonnegative.