

Bars and Beyond

Simplify absolute value expressions and locate each result.

GRADE 6 • 6.CE.2.c

6.CE.2.c "Simplify an expression that contains absolute value bars $| |$ and an operation with two integers (e.g., $-|5 - 8|$ or -128) and represent the result on a number line."

NAME _____

DATE _____

ABSOLUTE VALUE STEPS

First, do the operation inside the absolute value bars. Absolute value tells how far a number is from 0, so its value is never negative. If a negative sign is outside the bars, apply it after finding the absolute value.

WORKED EXAMPLE

Simplify $-|21 - 8|$. Then plot the result on a number line.

1. $21 - 8 = 13$
2. Replace the expression: $-|13|$
3. $|13| = 13$, so the result is -13

Answer: -13; plot a point at -13

PRACTICE 6 problems

- 1** Simplify $-|6 - 11|$. Then plot the result on a number line.

ANSWER _____

- 2** Simplify $-|7 + 2|$. Then plot the result on a number line.

ANSWER _____

- 3** Simplify $-|-3 - 9|$. Then plot the result on a number line.

ANSWER _____

- 4** Simplify $|12 + (-15)|$. Then plot the result on a number line.

ANSWER _____

- 5** Simplify $-|-14 + 7|$. Then plot the result on a number line.

ANSWER _____

- 6** Simplify $-|10 - (-6)|$. Then plot the result on a number line.

ANSWER _____

APPLY IT Show your work

- 1** In a rhythm game, a player's score adjustment is calculated by $-|18 - 25|$ points. What is the score adjustment? Plot the result on a number line.

WORK SPACE

ANSWER _____

- 2** A drone club tracks height changes from its starting spot. One flight is modeled by $-|16 + 23|$ feet. How far from the starting height is the drone? Plot the result on a number line.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Simplify $-|12 + 19| + 6$. Then plot the result on a number line.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Simplify $- 6 - 11 $. Then plot the result on a number line.	-5; plot a point at -5
2	Simplify $ -7 + 2 $. Then plot the result on a number line.	5; plot a point at 5
3	Simplify $- -3 - 9 $. Then plot the result on a number line.	-12; plot a point at -12
4	Simplify $ 12 + (-15) $. Then plot the result on a number line.	3; plot a point at 3
5	Simplify $- -14 + 7 $. Then plot the result on a number line.	-7; plot a point at -7
6	Simplify $ -10 - (-6) $. Then plot the result on a number line.	4; plot a point at 4

PART 2 • APPLY IT

- 7 points; plot a point at -7** Calculate $18 - 25 = -7$. The absolute value is 7, and the negative sign outside the bars makes the score adjustment -7 points.
- 7 feet; plot a point at 7** Calculate $-16 + 23 = 7$. The absolute value of 7 is 7, so the drone is 7 feet from its starting height.

CHALLENGE

-1; plot a point at -1

Accept equivalent wording for the number-line representation if the point is placed at the correct integer. Students should simplify inside the bars before applying an outside negative sign or any operation after the bars.