

Integer Moves

Use signs, absolute value, and smart estimates.

GRADE 6 • 6.CE.2

6.CE.2 "The student will estimate, demonstrate, solve, and justify solutions to problems using operations with integers, including those in context. Demonstrate/model addition, subtraction, multiplication..."

NAME _____

DATE _____

TRACK THE SIGNS

On a number line, adding a positive integer moves right and adding a negative integer moves left. Subtracting an integer is the same as adding its opposite, and multiplication or division of integers with the same sign gives a positive result. Absolute value tells a number's distance from zero, so it is never negative.

WORKED EXAMPLE

Evaluate: $-|12 - (-5)|$

1. Subtracting -5 is the same as adding 5.
2. $12 + 5 = 17$.
3. $|17| = 17$, then the negative sign outside the bars gives -17 .

Answer: -17

PRACTICE 6 problems

1 Find: $-9 + 16$

ANSWER _____

2 Find: $18 - (-7)$

ANSWER _____

3 Find: -6×-4

ANSWER _____

4 Find: $-56 \div 8$

ANSWER _____

5 Find: $|-13 - 2|$

ANSWER _____

6 Find: $-|-11 - 9|$. State the integer where the result would be on a number line.

ANSWER _____

APPLY IT Show your work

- 1** At the start of an online game, Maya's score is -23 points. She gains 31 points in one round and loses 14 points in the next round. Round each integer to the nearest ten to estimate her final score. Then find her exact final score and explain why it is negative.

WORK SPACE

ANSWER _____

- 2** A robotics club account has \$50. The club pays \$9 each week for 4 weeks to rent a practice field. Treat each payment as -\$9. Round the weekly payment to the nearest ten to estimate the final balance. Then find the exact final balance and explain why the multiplication uses a negative integer.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Evaluate: $-|-24 \div 6 + 7|$

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Find: $-9 + 16$	7
2	Find: $18 - (-7)$	25
3	Find: -6×-4	24
4	Find: $-56 \div 8$	-7
5	Find: $ -13 - 2 $	15
6	Find: $- -11 - 9 $. State the integer where the result would be on a number line.	-20

PART 2 • APPLY IT

1. **Estimate: 0 points. Exact score: -6 points.** The estimate is $-20 + 30 + (-10) = 0$. The exact score is $-23 + 31 + (-14) = -6$, so her losses and starting deficit are greater than her gain.
2. **Estimate: \$10. Exact balance: \$14.** The estimate is $50 + (-10 \times 4) = 10$, and the exact balance is $50 + (-9 \times 4) = 14$. The payment is negative because money leaves the account.

CHALLENGE

-3

Accept equivalent equations and explanations that correctly describe signed gains, losses, or payments. For the estimate problems, accept only results based on the rounding directions in each prompt.