

Signed Number Stories

Multiply and divide signed numbers, then explain what the result means.

GRADE 7 • 7.NR.1.8

7.NR.1.8 "Represent the multiplication and division of integers using a variety of strategies and interpret products and quotients of rational numbers by describing them based on the relevant situation."

NAME _____

DATE _____

SIGNS TELL THE DIRECTION

When you multiply or divide signed numbers, the answer is positive when the signs are the same and negative when the signs are different. First find the product or quotient of the absolute values, then use the signs to decide whether the result shows a gain or a loss, an increase or a decrease.

WORKED EXAMPLE

Find $(-8) * (-3)$.

1. The signs are the same, so the product is positive.
2. Multiply the absolute values: $8 * 3 = 24$.
3. Attach the positive sign: $+24$.

Answer: 24

PRACTICE 6 problems

1 Find $(-7) * 6$.

ANSWER _____

2 Find $9 * (-5)$.

ANSWER _____

3 Find $(-54) / 9$.

ANSWER _____

4 Find $(-72) / (-12)$.

ANSWER _____

5 Find $(-4) * (-11)$.

ANSWER _____

6 Find $63 / (-7)$.

ANSWER _____

APPLY IT Show your work

- 1** In an online game, Jordan's team loses 15 points in each of 4 penalty rounds. Write and evaluate an expression for the team's total score change.

WORK SPACE

ANSWER _____

- 2** A phone battery's charge changes by $-2/5\%$ per minute while a demanding video renders. What is the total change after 7 minutes?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Before computing, state whether the quotient is positive or negative. Then calculate $(-5/14) / (10/7)$. Explain how the signs help you decide.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Find $(-7) * 6$.	-42
2	Find $9 * (-5)$.	-45
3	Find $(-54) / 9$.	-6
4	Find $(-72) / (-12)$.	6
5	Find $(-4) * (-11)$.	44
6	Find $63 / (-7)$.	-9

PART 2 • APPLY IT

1. **-60 points, a loss of 60 points** Multiply the score change per round by the number of rounds: $(-15) * 4 = -60$. The negative result means the team lost points.
2. **-14/5%, or -2 4/5%, meaning the battery charge decreases** Multiply the change each minute by the number of minutes: $(-2/5) * 7 = -14/5$. The negative result represents a decrease in battery charge.

CHALLENGE

-1/4. The quotient is negative because a negative number divided by a positive number is negative.

Accept equivalent fraction forms for the battery problem, including $-14/5\%$ and $-2 \frac{4}{5}\%$. For the challenge, students should identify the quotient as negative and give $-1/4$.