LESSON MAKER PRO

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

For multiplication and division, same signs give a positive result and different signs give a negative result. Represent operations with equal groups, counters or directed jumps, then connect the model to an equation. Interpret a signed answer using the situation.

WORKED EXAMPLE

$3 \times (-4) = ?$



1. Begin at zero. Each change of -4 moves four units left.
2. Three equal changes end at -12.

Answer: -12

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. Draw directed jumps from zero to show the four rounds. Label each change and the endpoint.

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

WORK SPACE

ANSWER

CHALLENGE One step up

Represent (-12) ÷ 3 with twelve negative counters shared into three equal groups. Draw the groups, write an equation and explain the quotient. Then calculate (-5/14) ÷ (10/7) and explain its sign.

ANSWER KEY

Signed Number Stories

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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. **4 × (-15) = -60; four leftward jumps of 15 from zero end at -60, 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 percentage points, or -2 4/5 percentage points; the battery charge percentage decreases by 2.8 points.** Multiply the change per minute by seven: (-2/5) × 7 = -14/5 percentage points.

CHALLENGE

Three groups of four negative counters give -4 per group: (-12) ÷ 3 = -4. The rational quotient is -1/4 because the dividend is negative and the divisor positive.

Check direction and equal jump sizes in the multiplication model; check three groups of four negative counters in division. Battery change is in percentage points, avoiding ambiguity with a relative percentage change. Accept equivalent rational-number forms.