LESSON MAKER PRO

Signed Number Stories

Multiply and divide rational numbers in calculations and community contexts.

GRADE 7 · MT.7.NS.2

MT.7.NS.2 "Multiply and divide rational numbers and use operations of rational numbers to solve problems in context. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities."

NAME _____ DATE _____

SIGN AND SIZE

To multiply rational numbers, multiply their absolute values, then decide the sign. Two numbers with the same sign have a positive product; numbers with different signs have a negative product. To divide, multiply by the reciprocal of the second number and use the same sign rules.

WORKED EXAMPLE

Find -5/8 ÷ 15/16.

1. Multiply by the reciprocal: -5/8 × 16/15.
2. Multiply: (-5 × 16)/(8 × 15) = -80/120.
3. Simplify: -80/120 = -2/3.

Answer: -2/3

PRACTICE 6 problems

1 Find (-2/7) × (21/4).

ANSWER _____

2 Find 5/6 ÷ (-10/3).

ANSWER _____

3 Find (-1.2) × (-0.5).

ANSWER _____

4 Find -3/10 ÷ (-9/5).

ANSWER _____

5 Find (-2 1/4) × (4/9).

ANSWER _____

6 Find (-1.5) ÷ 0.25.

ANSWER _____

APPLY IT Show your work

1 At a community garden in Browning, Blackfeet youth share 7 1/2 pounds of harvested potatoes equally among 6 households. How many pounds does each household receive?

WORK SPACE

ANSWER _____

2 Students from the Confederated Salish and Kootenai Tribes monitor a creek near Pablo. Its water level changes by -2/5 inch per hour for 5 hours. What is the total change in water level?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A stream gauge reads -1 1/4 inches compared with a reference mark. Over the next 3 hours, the water level changes by -2/3 inch per hour. Then it rises 1 1/2 inches. What is the final reading compared with the mark? Show an expression and state whether the water is above or below the mark.

WORK SPACE AND ANSWER

ANSWER KEY

Signed Number Stories

GRADE 7 · MT.7.NS.2

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find (-2/7) × (21/4).	**-3/2**
2	Find 5/6 ÷ (-10/3).	**-1/4**
3	Find (-1.2) × (-0.5).	**0.6**
4	Find -3/10 ÷ (-9/5).	**1/6**
5	Find (-2 1/4) × (4/9).	**-1**
6	Find (-1.5) ÷ 0.25.	**-6**

PART 2 · APPLY IT

1. **1 1/4 pounds** Divide 7 1/2 by 6: (15/2) ÷ 6 = 15/12 = 1 1/4.
2. **-2 inches** Multiply the hourly change by the time: (-2/5) × 5 = -2 inches.

CHALLENGE

-1 1/4 + 3 × (-2/3) + 1 1/2 = -1 3/4 inches. The water is below the mark.

Accept equivalent fractions or mixed numbers for exact answers. In the challenge, accept any equivalent expression that applies the hourly change before finding the final reading.