LESSON MAKER PRO

Rational Number Moves

Multiply and divide positive and negative fractions, decimals, and integers.

GRADE 7 · NY-7.NS.2

NY-7.NS.2 "Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers."

NAME _____ DATE _____

MULTIPLY, DIVIDE, AND TRACK SIGNS

To multiply rational numbers, multiply the numerators and denominators, then simplify. To divide by a fraction, multiply by its reciprocal. A product or quotient of numbers with the same sign is positive, and one with different signs is negative.

WORKED EXAMPLE

Find (-4/15) ÷ (14/25).

1. Rewrite division as multiplication by the reciprocal.
2. (-4/15) ÷ (14/25) = (-4/15) × (25/14).
3. Write the product as -(4 × 25)/(15 × 14), then reduce to -(2 × 5)/(3 × 7).
4. Multiply to get -10/21.

Answer: -10/21

PRACTICE 6 problems

1 Find (-5/6) × (-18/35).

ANSWER _____

2 Find (-11/8) ÷ (22/9).

ANSWER _____

3 Find 2.6 × (-0.3).

ANSWER _____

4 Find -2 1/3 ÷ (-7/9).

ANSWER _____

5 Find (-2/13) × 39.

ANSWER _____

6 Find (7/16) ÷ (-8).

ANSWER _____

APPLY IT Show your work

1 A dance tutorial is 18 minutes long. You watch it at 2/3 of its usual speed so you can see each move. How many minutes does the tutorial take to play?

WORK SPACE

ANSWER _____

2 In an online game, Jordan's score changes by -1 1/2 points each round for 8 rounds. What is Jordan's total score change?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Evaluate (-9/22) ÷ (3/11) × (-2/3). Explain why the final answer is positive.

WORK SPACE AND ANSWER

ANSWER KEY

Rational Number Moves

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find (-5/6) × (-18/35).	**3/7**
2	Find (-11/8) ÷ (22/9).	**-9/16**
3	Find 2.6 × (-0.3).	**-0.78**
4	Find -2 1/3 ÷ (-7/9).	**3**
5	Find (-2/13) × 39.	**-6**
6	Find (7/16) ÷ (-8).	**-7/128**

PART 2 · APPLY IT

1. **27 minutes** Divide the original time by the playback rate: 18 ÷ 2/3 = 18 × 3/2 = 27.
2. **-12 points** Multiply the change each round by the number of rounds: (-1 1/2) × 8 = -12.

CHALLENGE

1. The quotient of -9/22 and 3/11 is negative, and multiplying that negative result by -2/3 gives a positive result.

Accept equivalent simplified fractions for fractional answers. Require -0.78 for the decimal product and accept correct unit labels in the word problems.