

Rational Number Moves

Multiply and divide positive and negative fractions.

GRADE 7 • 7.NS.A.2

CCSS.Math.Content.7.NS.A.2 "Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers."

NAME _____

DATE _____

MULTIPLY, THEN FLIP

When you multiply rational numbers, multiply the numerators and denominators, then use the signs to determine whether the product is positive or negative. To divide by a nonzero rational number, multiply by its reciprocal, then simplify the result.

WORKED EXAMPLE

$$(-4/9) \times (6/11)$$

1. A negative times a positive is negative.
2. Multiply the numerators: $4 \times 6 = 24$.
3. Multiply the denominators: $9 \times 11 = 99$.
4. Simplify $-24/99$ to $-8/33$.

Answer: $-8/33$

PRACTICE 6 problems

1 $(-2/3) \times (5/7)$

ANSWER _____

2 $3/8 \div (-2/5)$

ANSWER _____

3 $(-7/10) \times (-3/13)$

ANSWER _____

4 $(-10/13) \div (2/3)$

ANSWER _____

5 $1 \frac{1}{2} \times (-2/5)$

ANSWER _____

6 $(-5/16) \div (-2/3)$

ANSWER _____

APPLY IT Show your work

- 1** A skateboarder drops $\frac{3}{10}$ meter in elevation on each of 7 ramp sections. What is the total change in elevation?

WORK SPACE

ANSWER _____

- 2** A music app uses $\frac{7}{15}$ gigabyte of data each hour. You have $2\frac{1}{3}$ gigabytes of data available. How many hours can you use the app at this rate?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Evaluate: $(-\frac{2}{3}) \div (\frac{5}{7}) \times (-\frac{3}{8})$

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	$(-2/3) \times (5/7)$	-10/21
2	$3/8 \div (-2/5)$	-15/16
3	$(-7/10) \times (-3/13)$	21/130
4	$(-10/13) \div (2/3)$	-15/13
5	$1\ 1/2 \times (-2/5)$	-3/5
6	$(-5/16) \div (-2/3)$	15/32

PART 2 • APPLY IT

1. **-2 1/10 meters** Represent each drop as $-3/10$. Multiply $7 \times (-3/10) = -21/10 = -2\ 1/10$.
2. **5 hours** Divide the available data by the hourly rate: $2\ 1/3 \div 7/15 = 7/3 \times 15/7 = 5$.

CHALLENGE

7/20

Accept equivalent fractions and equivalent mixed-number or improper-fraction forms when the value and sign are correct. Division work should show multiplication by the reciprocal of a nonzero divisor.