LESSON MAKER PRO

Signed Number Moves

Multiply rational numbers and use familiar properties.

GRADE 7 · 7.NS.A.4.e

7.NS.A.4.e "Extend strategies of multiplication to rational numbers to develop rules for multiplying signed numbers, showing that the properties of the operations are preserved."

NAME _____ DATE _____

SIGNS AND PRODUCTS

Multiply the absolute values, then make the product negative if exactly one factor is negative. Two negative factors make a positive product, and any number times 0 is 0. You can still regroup factors or distribute a factor across a sum.

WORKED EXAMPLE

Find (-5/6)(9/10).

1. One factor is negative, so the product is negative.
2. Multiply the fractions: (5 × 9)/(6 × 10) = 45/60.
3. Simplify: -45/60 = -3/4.

Answer: -3/4

PRACTICE 6 problems

1 Find (-8)(3/4).

ANSWER _____

2 Find (-2/3)(-15/4).

ANSWER _____

3 Find (1.2)(-0.5).

ANSWER _____

4 Find (-7/10)(0).

ANSWER _____

5 Find (-9/8)(4/3).

ANSWER _____

6 Find (-1/4)(8)(-3). Group the factors to make the work easier.

ANSWER _____

APPLY IT Show your work

1 Your phone battery drops 1.5 percentage points each hour while you play a game. What is its total change after 4 hours? Write a multiplication expression.

WORK SPACE

ANSWER _____

2 A game removes 3 penalties from your score. Each penalty was worth -2.5 points. What is the change in your score? Write a multiplication expression.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Find (-3/4)(8 + (-12)) in two ways: first simplify inside the parentheses, then use the distributive property. Explain in one sentence why your answers match.

WORK SPACE AND ANSWER

ANSWER KEY

Signed Number Moves

GRADE 7 · 7.NS.A.4.e

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find (-8)(3/4).	**-6**
2	Find (-2/3)(-15/4).	**5/2**
3	Find (1.2)(-0.5).	**-0.6**
4	Find (-7/10)(0).	**0**
5	Find (-9/8)(4/3).	**-3/2**
6	Find (-1/4)(8)(-3). Group the factors to make the work easier.	**6**

PART 2 · APPLY IT

1. **(-1.5)(4) = -6 percentage points** Multiply the change each hour by 4 hours. The negative product represents a drop.
2. **(-3)(-2.5) = 7.5 points** Removing 3 penalties means subtracting -2.5 points three times, so the score increases by 7.5 points.

CHALLENGE

Simplify first: (-3/4)(-4) = 3. Distribute: (-3/4)(8) + (-3/4)(-12) = -6 + 9 = 3. Both methods give 3 because multiplication distributes over addition for signed numbers.

Accept equivalent fractions or decimals for practice answers. For the challenge, look for both methods and a sentence connecting their equal results to the distributive property.