LESSON MAKER PRO

Reverse the Product

Use opposites to multiply signed numbers.

GRADE 7 · 7.NOS.A.2.a

7.NOS.A.2.a "Model multiplication of rational numbers using number lines, arrays, or area models to show how properties of operations (e.g., the distributive property) lead to rules for signed number multiplication, including (−1) × (−1) = 1."

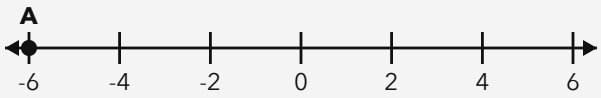
NAME _____ DATE _____

THE BIG IDEA

On a number line, multiplying by a negative reverses the direction of a matching positive product. The distributive property explains why: a number and its opposite add to zero, so their products by the same number must also add to zero.

WORKED EXAMPLE

Point A shows 3 × (-2). Use the line to find (-3) × (-2).



1. A is -6, so 3 × (-2) = -6.
2. 3 + (-3) = 0.
3. Distribute: 0 = -6 + (-3) × (-2).
4. The missing product is 6.

Answer: (-3) × (-2) = 6

PRACTICE 4 problems

1 Find (-1) × (-1).

ANSWER _____

2 Find (-4) × (-5).

ANSWER _____

3 Find (-2/3) × (-9).

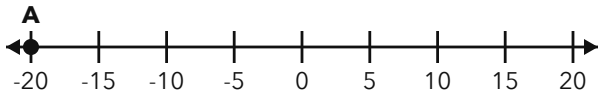
ANSWER _____

4 Find (-1.5) × 4.

ANSWER _____

APPLY IT Show your work

1 Point A shows the score change from 5 equal penalty rounds in a game. If all 5 rounds are canceled, how much does the score change compared with keeping them?



ANSWER _____

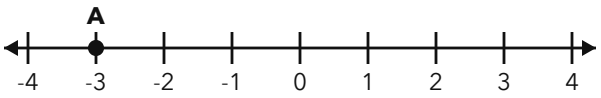
2 A game takes away 3/4 point for each wrong answer. If 8 wrong answers are erased, how does the score change?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Point A shows 6 × (-1/2). Use the line and the distributive property to find (-6) × (-1/2). Explain.



WORK SPACE AND ANSWER

ANSWER KEY

Reverse the Product

GRADE 7 · 7.NOS.A.2.a

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find (-1) × (-1).	**1**
2	Find (-4) × (-5).	**20**
3	Find (-2/3) × (-9).	**6**
4	Find (-1.5) × 4.	**-6**

PART 2 · APPLY IT

1. **The score increases by 20 points.** The 5 rounds total -20 points. Canceling them reverses that change, adding 20 points.
2. **The score increases by 6 points.** Each erased answer reverses a -3/4-point change. Calculate (-8) × (-3/4) = 6.

CHALLENGE

3. Since 6 + (-6) = 0, distributing gives 0 = -3 + (-6) × (-1/2). The product must be 3.

Accept equivalent explanations that use opposite products or the distributive property. For the game problems, require the direction of the score change.