LESSON MAKER PRO

Integer Division Quest

Divide integers and write each quotient as a rational number.

GRADE 7 · 7.NR.1.7

7.NR.1.7 "Show and explain that integers can be divided, assuming the divisor is not zero, and every quotient of integers is a rational number."

NAME _____ DATE _____

DIVISION MAKES RATIONAL NUMBERS

You can divide any integer by any nonzero integer. The quotient is rational because it can be written as a fraction with integers in the numerator and denominator. When dividing signed numbers, matching signs give a positive quotient and different signs give a negative quotient.

WORKED EXAMPLE

Find -20 / 5.

1. The signs are different, so the quotient is negative.
2. Divide the absolute values: 20 / 5 = 4.
3. Attach the negative sign: -20 / 5 = -4.

Answer: -4

PRACTICE 6 problems

1 Find 42 / -6.

ANSWER _____

2 Find -45 / -15.

ANSWER _____

3 Find 7 / 12. Write the fraction in simplest form.

ANSWER _____

4 Find -11 / 8. Write the fraction in simplest form.

ANSWER _____

5 Find 0 / -13.

ANSWER _____

6 Find 27 / -9.

ANSWER _____

APPLY IT Show your work

1 In an online tournament, a player's score changes by -72 points over 8 rounds at the same rate. What is the score change per round?

WORK SPACE

ANSWER _____

2 A student splits 13 GB of video clips equally among 3 folders. How many GB of clips are in each folder?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Without using decimals, find -32 / 12 in simplest form. Then explain in one sentence why your answer is rational.

WORK SPACE AND ANSWER

ANSWER KEY

Integer Division Quest

GRADE 7 · 7.NR.1.7

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find 42 / -6.	**-7**
2	Find -45 / -15.	**3**
3	Find 7 / 12. Write the fraction in simplest form.	**7/12**
4	Find -11 / 8. Write the fraction in simplest form.	**-11/8**
5	Find 0 / -13.	**0**
6	Find 27 / -9.	**-3**

PART 2 · APPLY IT

1. **-9 points per round** Divide the total score change by the number of rounds: -72 / 8 = -9. The negative quotient shows the player loses 9 points each round.
2. **13/3 GB** Divide the total storage by the number of folders: 13 / 3 = 13/3. This rational number is already in simplest form.

CHALLENGE

-8/3; it is rational because it is a ratio of integers, -8 and 3, and 3 is not zero.

Accept equivalent fraction forms only if students simplify them when the prompt asks for simplest form. For the challenge, accept explanations that state the quotient is a ratio of integers with a nonzero denominator.