LESSON MAKER PRO

Quotient Quest

Find the value, sign, and meaning of integer quotients.

GRADE 7 · 7A.NS.A.8.f

7A.NS.A.8.f "Divide integers and explain that division by zero is undefined. Interpret the quotient of integers (with a non-zero divisor) as a rational number."

NAME _____ DATE _____

DIVIDE WITH SIGNS

Divide the absolute values, then make the quotient negative if the integers have different signs. If the division does not come out evenly, write the quotient as a fraction and simplify it. Division by 0 is undefined because it cannot give one unique quotient.

WORKED EXAMPLE

Find -46 / 32 as a simplified fraction.

1. 46/32 simplifies to 23/16.
2. The signs differ, so the quotient is negative.

Answer: -23/16

PRACTICE 6 problems

1 Find -18 / 6.

ANSWER _____

2 Find 35 / -5.

ANSWER _____

3 Find -27 / -9.

ANSWER _____

4 Find 0 / -8.

ANSWER _____

5 Find 11 / 0.

ANSWER _____

6 Find -15 / 10 as a simplified fraction.

ANSWER _____

APPLY IT Show your work

1 A gaming club loses 45 points evenly across 9 rounds. What is the change in points per round?

WORK SPACE

ANSWER _____

2 A student shortens a playlist by 25 minutes over 6 equal edits. What is the change in play time per edit? Write an exact fraction.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A player says, "0 / -12 = 0, so -12 / 0 must also be 0." Find the value of each expression. Explain why one is undefined using multiplication.

WORK SPACE AND ANSWER

ANSWER KEY

Quotient Quest

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find -18 / 6.	**-3**
2	Find 35 / -5.	**-7**
3	Find -27 / -9.	**3**
4	Find 0 / -8.	**0**
5	Find 11 / 0.	**Undefined**
6	Find -15 / 10 as a simplified fraction.	**-3/2**

PART 2 · APPLY IT

1. **-5 points per round** The total change is -45 points. Divide -45 by 9 to get -5 points per round.
2. **-25/6 minutes per edit** Divide the total change, -25 minutes, by 6 edits. The quotient is -25/6 minutes per edit.

CHALLENGE

0 / -12 = 0 because -12 times 0 is 0. -12 / 0 is undefined because 0 times any number is 0, not -12.

Accept equivalent fractions for non-integer quotients. For the challenge, look for an explanation that no number multiplied by 0 gives -12.