LESSON MAKER PRO

Quotient Quest

Divide integers and make sense of the results.

GRADE 7 · 7.NS.A.4.f

7.NS.A.4.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 _____

THE BIG IDEA

When you divide two integers, the divisor cannot be 0. Same signs give a positive quotient, and different signs give a negative quotient. With a nonzero divisor, the quotient is a rational number, so it can be written as a fraction.

WORKED EXAMPLE

Find -35 / 14. Write the quotient as a simplified fraction.

1. The signs are different, so the quotient is negative.
2. Write the division as a fraction: -35/14.
3. Divide the numerator and denominator by 7: -35/14 = -5/2.

Answer: -5/2

PRACTICE 6 problems

1 Find -24 / 6.

ANSWER _____

2 Find 18 / -12. Write your answer as a simplified fraction.

ANSWER _____

3 Find -27 / -9.

ANSWER _____

4 Find 0 / -8.

ANSWER _____

5 Is 16 / 0 defined? Explain in one sentence.

ANSWER _____

_____

6 Find -22 / 8. Write the quotient as a simplified fraction and as a decimal.

ANSWER _____

_____

APPLY IT Show your work

1 In a video game, a player loses 42 points from equal penalties over 6 rounds. What is the score change in each round?

WORK SPACE

ANSWER _____

2 Four friends split a $26 concert ticket fee equally. They record money owed as a negative balance. What is each friend's balance from the fee?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Find the integer x that makes -36 / x = 9/2. Show how you know your value works, and explain why x cannot be 0.

WORK SPACE AND ANSWER

ANSWER KEY

Quotient Quest

GRADE 7 · 7.NS.A.4.f

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find -24 / 6.	**-4**
2	Find 18 / -12. Write your answer as a simplified fraction.	**-3/2**
3	Find -27 / -9.	**3**
4	Find 0 / -8.	**0**
5	Is 16 / 0 defined? Explain in one sentence.	**No, it is undefined because no number multiplied by 0 equals 16.**
6	Find -22 / 8. Write the quotient as a simplified fraction and as a decimal.	**-11/4 and -2.75**

PART 2 · APPLY IT

1. **-7 points** Divide the total score change by the number of rounds: -42 / 6 = -7.
2. **-$6.50** The group's balance is -$26. Divide by 4 to get -$6.50 for each friend.

CHALLENGE

x = -8 because -36 / -8 = 36/8 = 9/2. x cannot be 0 because division by 0 is undefined.

Accept equivalent fractions where a simplified form is not requested. In problem 5, accept an explanation that division by zero is undefined.