

Fraction Division Quest

Divide unit fractions and whole numbers with confidence.

GRADE 5 • 5.NR.3.6

5.NR.3.6 "Model and solve problems involving division of a unit fraction by a whole number and a whole number by a unit fraction."

NAME _____

DATE _____

TWO DIVISION PATTERNS

When you divide a unit fraction by a whole number, multiply the denominator by the whole number. When you divide a whole number by a unit fraction, multiply the whole number by the fraction's denominator. These patterns show whether the answer should be a smaller fraction or a larger whole number.

WORKED EXAMPLE

$$1/7 \div 6$$

1. Split $1/7$ into 6 equal parts.
2. Multiply the denominator: $7 \times 6 = 42$.
3. So, $1/7 \div 6 = 1/42$.

Answer: $1/42$

PRACTICE 6 problems

1 $1/3 \div 5 = \underline{\hspace{2cm}}$

ANSWER _____

2 $1/11 \div 2 = \underline{\hspace{2cm}}$

ANSWER _____

3 $3 \div 1/4 = \underline{\hspace{2cm}}$

ANSWER _____

4 $10 \div 1/2 = \underline{\hspace{2cm}}$

ANSWER _____

5 $1/9 \div 4 = \underline{\hspace{2cm}}$

ANSWER _____

6 $12 \div 1/3 = \underline{\hspace{2cm}}$

ANSWER _____

APPLY IT Show your work

- 1** At robotics club, $\frac{1}{8}$ of a spool of wire is shared equally by 3 teams. What fraction of the whole spool does each team get?

WORK SPACE

ANSWER _____

- 2** A game designer has 5 meters of ribbon and cuts it into strips that are each $\frac{1}{5}$ meter long. How many strips can the designer make?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Which quotient is greater, $\frac{1}{5} \div 8$ or $8 \div \frac{1}{5}$? Explain how you know.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	$1/3 \div 5 = \underline{\hspace{1cm}}$	1/15
2	$1/11 \div 2 = \underline{\hspace{1cm}}$	1/22
3	$3 \div 1/4 = \underline{\hspace{1cm}}$	12
4	$10 \div 1/2 = \underline{\hspace{1cm}}$	20
5	$1/9 \div 4 = \underline{\hspace{1cm}}$	1/36
6	$12 \div 1/3 = \underline{\hspace{1cm}}$	36

PART 2 • APPLY IT

- 1/24 of the spool** Divide $1/8$ by 3. Multiply the denominator by 3, so $1/8 \div 3 = 1/24$.
- 25 strips** Find how many $1/5$ -meter lengths are in 5 meters. Calculate $5 \div 1/5 = 5 \times 5 = 25$.

CHALLENGE

$8 \div 1/5$ is greater. $1/5 \div 8 = 1/40$, and $8 \div 1/5 = 40$.

Accept equivalent fraction forms when they are correct, although all fraction answers are already simplified. For the challenge, accept a clear comparison supported by correct quotient values or sound reasoning about dividing by a unit fraction.