

Flip and Solve

Multiply and divide positive fractions with confidence.

GRADE 6 • TEKS 6.3

6.3 "Number and operations. The student applies mathematical process standards to represent addition, subtraction, multiplication, and division while solving problems and justifying solutions..."

NAME _____

DATE _____

DIVIDE BY FLIPPING

To divide by a positive fraction, multiply by its reciprocal, which is the fraction turned upside down. When you multiply a positive quantity by a fraction between 0 and 1, it decreases. When you multiply by a fraction greater than 1, it increases.

WORKED EXAMPLE

$$8/11 \div 4/9$$

1. Change division to multiplication by the reciprocal: $8/11 \times 9/4$
2. Cancel 8 and 4: $2/11 \times 9/1$
3. Multiply: $2 \times 9 = 18$ and $11 \times 1 = 11$
4. Write the quotient as $18/11$.

Answer: 18/11, or 1 7/11

PRACTICE 6 problems

1 $3/5 \times 10/21$

ANSWER _____

2 $3/7 \div 6/7$

ANSWER _____

3 Without computing, is 18 increased or decreased when multiplied by $2/3$?

ANSWER _____

4 $1/2 \div 3/5$

ANSWER _____

5 $2/7 \times 7/15$

ANSWER _____

6 $1 \frac{1}{2} \div 3/5$

ANSWER _____

APPLY IT Show your work

- 1** Jordan has $2\frac{1}{3}$ yards of cord to make lanyards. Each lanyard needs $\frac{7}{12}$ yard of cord. How many complete lanyards can Jordan make?

WORK SPACE

ANSWER _____

- 2** A gaming club plans a 42-minute tournament. The bonus round lasts $\frac{5}{6}$ as long as the tournament. How many minutes does the bonus round last?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A club has $3\frac{1}{2}$ yards of ribbon. Each bow uses $\frac{7}{10}$ yard of ribbon. How many bows can the club make? Explain why multiplying by $\frac{10}{7}$ is used.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	$3/5 \times 10/21$	2/7
2	$3/7 \div 6/7$	1/2
3	Without computing, is 18 increased or decreased when multiplied by $2/3$?	Decreased
4	$1/2 \div 3/5$	5/6
5	$2/7 \times 7/15$	2/15
6	$1\ 1/2 \div 3/5$	5/2, or $2\ 1/2$

PART 2 • APPLY IT

1. **4 lanyards** Convert $2\ 1/3$ to $7/3$, then divide: $7/3 \div 7/12 = 7/3 \times 12/7 = 4$.
2. **35 minutes** Multiply the tournament time by the fraction: $42 \times 5/6 = 35$.

CHALLENGE

5 bows. $3\ 1/2 \div 7/10 = 7/2 \times 10/7 = 5$. Multiplying by $10/7$ is used because $10/7$ is the reciprocal of $7/10$.

Accept equivalent fractions and mixed numbers for answers greater than 1. For the increase or decrease item, accept "smaller" for decreased.