LESSON MAKER PRO

Fraction Power Moves

Estimate, calculate, and check fraction products and quotients.

GRADE 6 · 6.CE.1.e

6.CE.1.e "Estimate, determine, and justify the solution to single-step and multistep problems in context that involve multiplication and division with fractions (proper or improper) and mixed numbers that include denominators of 12 or less..."

NAME _____ DATE _____

ESTIMATE, THEN SOLVE

Estimate before you calculate by using nearby benchmark numbers such as 0, 1/2, 1, or a whole number. To multiply fractions, multiply numerators and denominators, then simplify. To divide by a fraction, multiply by the reciprocal of the divisor.

WORKED EXAMPLE

Estimate, then find $2\ 1/5 \div 2/5$.

1. Estimate: 2 ÷ 1/2 is about 4.
2. Change 2 1/5 to 11/5.
3. Multiply by the reciprocal: 11/5 × 5/2.
4. Cancel the 5s: 11/2 = 5 1/2.

Answer: 5 1/2

PRACTICE 6 problems

1 Estimate, then find 5/6 × 3/10. Write the answer in simplest form.

ANSWER _____

2 Estimate, then find 7/8 ÷ 7/12. Write the answer in simplest form.

ANSWER _____

3 Estimate, then find 1 2/3 × 3/5. Write the answer in simplest form.

ANSWER _____

4 Estimate, then find 2 2/3 ÷ 4/9. Write the answer in simplest form.

ANSWER _____

5 Estimate, then find (3/4 ÷ 1/2) × 2/3. Write the answer in simplest form.

ANSWER _____

6 Estimate, then find (1 1/4 × 4/5) ÷ 2/3. Write the answer in simplest form.

ANSWER _____

APPLY IT Show your work

1 The robotics club has 4 1/2 hours of testing time. One battery pack runs a robot for 3/4 hour. Estimate, then find how many battery packs the club needs. Explain why your exact answer makes sense.

WORK SPACE

ANSWER _____

2 A media club has 2 2/3 hours to make video clips. The club uses 3/4 of that time for recording. Each clip takes 1/3 hour to record. Estimate, then find how many clips the club can record. Explain why your exact answer makes sense.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A school art club has 5 1/4 yards of fabric. It uses 4/7 of the fabric for flags. Each flag needs 1/4 yard of fabric. Estimate, then find the number of flags. Write one sentence explaining why your exact answer is reasonable.

WORK SPACE AND ANSWER

ANSWER KEY

Fraction Power Moves

GRADE 6 · 6.CE.1.e

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Estimate, then find 5/6 × 3/10. Write the answer in simplest form.	**Estimate: about 1/2; exact answer: 1/4**
2	Estimate, then find 7/8 ÷ 7/12. Write the answer in simplest form.	**Estimate: about 2; exact answer: 1 1/2**
3	Estimate, then find 1 2/3 × 3/5. Write the answer in simplest form.	**Estimate: about 1; exact answer: 1**
4	Estimate, then find 2 2/3 ÷ 4/9. Write the answer in simplest form.	**Estimate: about 6; exact answer: 6**
5	Estimate, then find (3/4 ÷ 1/2) × 2/3. Write the answer in simplest form.	**Estimate: about 1; exact answer: 1**
6	Estimate, then find (1 1/4 × 4/5) ÷ 2/3. Write the answer in simplest form.	**Estimate: about 2; exact answer: 1 1/2**

PART 2 · APPLY IT

1. **6 battery packs** An estimate of about 5 or 6 packs is reasonable. Calculate 4 1/2 ÷ 3/4 = 9/2 × 4/3 = 6, so the exact answer fits the estimate.
2. **6 clips** First find the recording time: 2 2/3 × 3/4 = 2 hours. Then divide 2 ÷ 1/3 = 6, so 6 clips is reasonable because several one-third-hour clips fit into 2 hours.

CHALLENGE

Estimate: about 10 flags; exact answer: 12 flags.

Accept reasonable benchmark estimates that support the exact answer. Accept equivalent fraction forms during work, but final answers should be in simplest form, with improper fractions written as mixed numbers when appropriate.