MATHEMATICS · GRADES 4-6

Estimating fraction calculations

Difficulty level: Intermediate

Mathematics: Grades 4-6

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Overview of the concept

This is how you judge quickly whether a fraction answer is sensible. Checking a recipe total with nearby friendly fractions, like a half or a quarter, tells you roughly what the answer should be before you trust an exact calculation. If the exact answer is nowhere near your estimate, you know to redo it. It keeps fractions from giving you an answer that looks precise but is actually wrong.



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Worked examples

EXAMPLE 1

Q Estimate $\frac{5}{6} + \frac{1}{7}$.

SOLUTION

This is a fraction estimate, so round each fraction to the nearest benchmark: 0, $\frac{1}{2}$, or 1.

$\frac{5}{6}$ is close to 1, and $\frac{1}{7}$ is close to 0.

1 + 0 = 1, so the sum is about 1

EXAMPLE 2

Q Estimate $\frac{9}{10} - \frac{1}{3}$.

SOLUTION

Round each fraction to 0, $\frac{1}{2}$, or 1.

$\frac{9}{10}$ is close to 1, and $\frac{1}{3}$ is close to $\frac{1}{2}$, because its numerator is about half its denominator.

$1 - \frac{1}{2} = \frac{1}{2}$, so the difference is about $\frac{1}{2}$

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Practice questions

1 Maya eats $\frac{7}{8}$ of a pizza at lunch and $\frac{1}{9}$ of a pizza at dinner. About how much pizza does she eat in all? Estimate by rounding each fraction to 0, $\frac{1}{2}$, or 1

A About 0

B About $\frac{1}{2}$

C About 1

D About 2

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2

A jug holds $\frac{3}{4}$ of a litre. About how many litres do 4 jugs hold? Estimate by rounding $\frac{3}{4}$ to 0, $\frac{1}{2}$, or 1.

A About 2

B About 3

C About 4

D About 5

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3 A tank is $\frac{5}{6}$ full and $\frac{1}{6}$ of a tank is used. About how full is the tank now? Estimate by rounding each fraction to 0, $\frac{1}{2}$, or 1

A About 0

B About $\frac{1}{2}$

C About 1

D About 2

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4 Priya walks $\frac{11}{12}$ of a kilometre to school and $\frac{9}{10}$ of a kilometre to the library. About how many kilometres does she walk in all? Estimate by rounding each fraction to 0, $\frac{1}{2}$, or 1

- **A** About 1
- **B** About $1\frac{1}{2}$
- **C** About 2
- **D** About 3

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5 Estimate $\frac{2}{3} + \frac{1}{3} + \frac{1}{6}$ by rounding each fraction to 0, $\frac{1}{2}$, or 1.

- **A** About 0
- **B** About $\frac{1}{2}$
- **C** About 1
- **D** About 2

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6 Estimate $4\frac{1}{8} + 2\frac{7}{8}$ by rounding each mixed number to the nearest whole number.

- **A** About 5
- **B** About 6
- **C** About 7
- **D** About 8

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7 Estimate $6\frac{1}{5} \times 2\frac{9}{10}$ by rounding each mixed number to the nearest whole number.

- **A** About 12
- **B** About 15
- **C** About 18
- **D** About 21

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8 Maya estimates $\frac{7}{8} + \frac{1}{9}$ is about 2. Is she right? Answer yes or no.

- A Yes
- B No

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9 Estimate $\frac{9}{10} \times \frac{1}{2}$ by rounding each fraction to 0, $\frac{1}{2}$, or 1.

- A About 0
- B About $\frac{1}{2}$
- C About 1
- D About 2

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10 Two jugs hold $\frac{1}{8}$ of a litre and $\frac{1}{6}$ of a litre. About how many litres is that in all?

- **A** About 0
- **B** About $\frac{1}{2}$
- **C** About 1
- **D** About 2

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ANSWER KEY

1. About 1

2. About 4

3. About 1

4. About 2

5. About 1

6. About 7

7. About 18

8. No

9. About $\frac{1}{2}$

10. About 0

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