



Adding and subtracting unlike denominators

GRADE 5 MATH

Name _____

Date _____

Before each calculation, write the two numbers your answer must lie between. One skill: **adding and subtracting unlike denominators**.

WORKED EXAMPLE

You cannot add pieces of **different sizes**, so give them the same size: $\frac{1}{2} = \frac{3}{6}$ and $\frac{1}{3} = \frac{2}{6}$, and then 3 sixths + 2 sixths = **$\frac{5}{6}$** , which is just counting. Adding tops to tops and bottoms to bottoms gives $\frac{2}{5}$, and $\frac{2}{5}$ is **smaller than $\frac{1}{2}$** — adding a positive amount cannot do that. When you change the bottom you must change the **top by the same factor**: smaller pieces means **more** of them. And **check the range first**: $\frac{1}{3}$ is less than $\frac{1}{2}$, so $\frac{1}{2} + \frac{1}{3}$ lies between $\frac{1}{2}$ and 1, which rejects $\frac{2}{5}$ before any denominator is found.

NOW ONE THAT NEEDS REGROUPING

$4\frac{1}{5} - 1\frac{3}{5}$. You cannot take 3 fifths from 1 fifth, so break a whole: $4\frac{1}{5} = 3 + \frac{6}{5}$. Now $\frac{6}{5} - \frac{3}{5} = \frac{3}{5}$, and $3 - 1 = 2$. **$2\frac{3}{5}$** .
Same move as breaking a ten — one whole becomes five fifths.

1. Work out $\frac{2}{3} + \frac{1}{4}$. First write the two numbers your answer must lie between.

APPLICATION

Show your thinking

Answer

2. Work out $\frac{5}{6} - \frac{1}{3}$. First write the two numbers your answer must lie between.

APPLICATION

Show your thinking

Answer

3. Work out $3\frac{1}{4} - 1\frac{3}{4}$.

FLUENCY

Show your thinking

Answer

4. Eli works out $\frac{1}{2} + \frac{1}{3} = \frac{2}{5}$. Show that $\frac{2}{5}$ cannot be right without doing the addition, then explain what Eli did and why it does not work.

REASONING

Show your thinking

Answer

5. Nell rewrites $\frac{1}{2} + \frac{1}{3}$ as $\frac{1}{6} + \frac{1}{6} = \frac{2}{6}$. She found the right denominator. Explain what she still needed to do, and why.

REASONING

Show your thinking

Answer