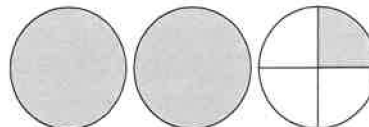
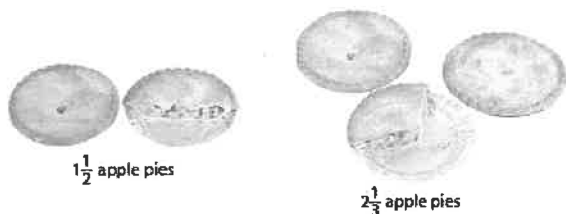


Chapter 4: Adding and subtracting fractions**Section 4.3 - Adding and subtracting mixed numbers****Mixed number** - Contains a whole number and a fractionEx. "Two and one quarter" $\longrightarrow 2\frac{1}{4}$ $\longrightarrow$ **Adding mixed numbers****Example**

How many pies are there in total?



$$1\frac{1}{2} + 2\frac{2}{3}$$

$$\textcircled{1} 1 + 2 + \frac{1}{2} + \frac{2}{3}$$

$$\textcircled{3} \begin{array}{l} 3 + \frac{1}{2} + \frac{2}{3} \\ \frac{1}{2} \xrightarrow{\times 3} \frac{3}{6} \\ \frac{2}{3} \xrightarrow{\times 2} \frac{4}{6} \end{array}$$

$$\textcircled{4} 3 + \frac{3}{6} + \frac{4}{6}$$

$$\textcircled{5} 3\frac{5}{6} \text{ - already in lowest terms.}$$

**Key Points**

- $\textcircled{1}$ • Add the whole numbers together and add the fractions together separately

For the fractions, follow the same steps as before

- $\textcircled{2}$ • Find a common denominator
 - Lowest Common Multiple (LCM)
- $\textcircled{3}$ • Make equivalent fractions
- $\textcircled{4}$ • Add the numerators
- $\textcircled{5}$ • Reduce to lowest terms

Try it out:

$$3\frac{7}{12} \quad 1. \quad 2\frac{1}{3} + 1\frac{1}{4}$$

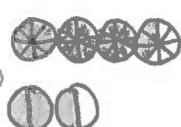
$$1\frac{9}{10} \quad 2. \quad 1\frac{2}{5} + \frac{1}{2}$$

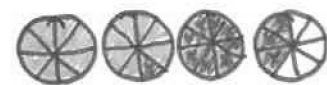
$$3\frac{1}{3} \quad 3. \quad 1\frac{1}{6} + 1\frac{2}{3} + \frac{1}{2}$$

Subtracting mixed numbers**Example**

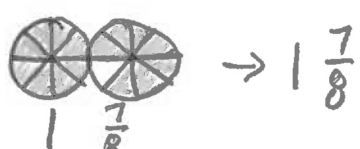
Matthew has $3\frac{3}{8}$ pieces of a chocolate bar. He wants to give his friend $1\frac{1}{2}$ pieces. How much will he have left?

① $3\frac{3}{8} - 1\frac{1}{2}$ 

$\frac{27}{8} - \frac{3}{2}$ ② $\frac{LCM}{2, 4, 6, 8}$ 

③ $\frac{3}{2} = \frac{12}{8}$ 

④ $\frac{27}{8} - \frac{12}{8} = \frac{15}{8}$ 

⑤ $\frac{15}{8} \rightarrow 1\frac{7}{8}$ 

Try it out:

$2\frac{1}{2}$ 4. $3\frac{3}{5} - 1\frac{1}{10}$

$\frac{17}{20}$ 5. $4\frac{1}{4} - 3\frac{2}{5}$

$3\frac{3}{8}$ 6. $4\frac{1}{4} - \frac{7}{8}$

Key Points

- **Subtract the whole numbers and the fractions separately**

① • Convert to improper fractions. *→ makes things difficult sometimes*

For the fractions

- Find a common denominator

② • Lowest Common Multiple (LCM)

③ • Make equivalent fractions

④ • Subtract the numerators

- If there is a larger fraction being subtracted than what you have, "borrow" from one of the whole numbers

⑤ • Reduce to lowest terms
Change back to mixed number

Practice assignment - page 113 # 1, 2, 3, 5, 6, 7, 8, 10 choose two apply (challenge #21 and 22)

page 120 # 1, 3, 4, 6, choose two apply (challenge #18 and 22)

Name:

Math 8

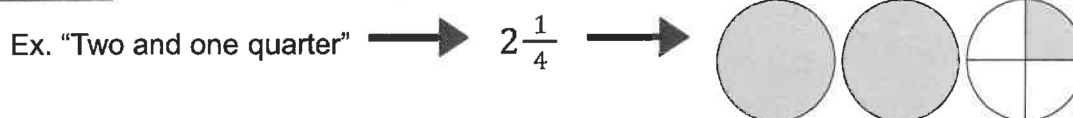
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Mini Lesson - Improper fractions and mixed numbers

Improper fraction - The numerator is greater than the denominator

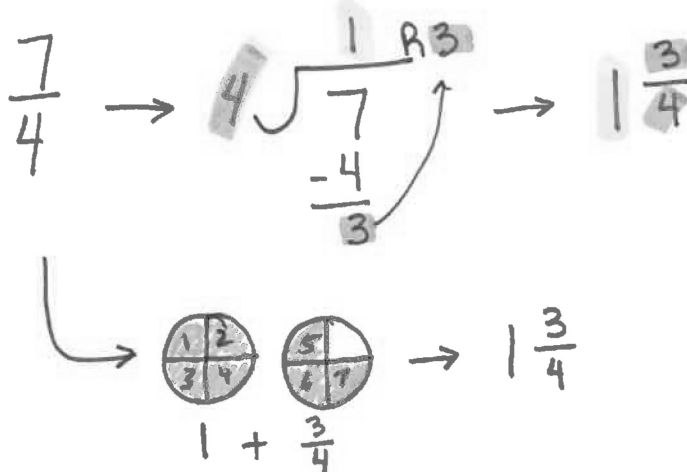


Mixed number - Contains a whole number and a fraction



Converting between improper fractions and mixed numbers

Improper fraction $\rightarrow$ **Mixed number**



- How many full groups of the denominator fits into the numerator?
- what's leftover?

Mixed number $\rightarrow$ **Improper fraction**

$1\frac{3}{4} \rightarrow (1 \times 4) + 3 = 7 \rightarrow \frac{7}{4}$

$3\frac{3}{8} \rightarrow \frac{27}{8}$

- multiply whole # by denominator
 $\rightarrow$ # of groups of denominator
- add product to numerator
 $\rightarrow$ leftover pieces