Adding and subtracting fractions (1)

Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

Challenge 1

1 Work out each of these fraction addition and subtraction calculations. Remember to start by changing both fractions to equivalent fractions with the same denominator.

Example

$\frac{3}{5} - \frac{1}{2} = \frac{6}{10} - \frac{5}{10} = \frac{1}{10}$

a $\frac{3}{4} + \frac{1}{2}$ b $\frac{2}{5} + \frac{4}{10}$ c $\frac{4}{6} + \frac{5}{12}$ d $\frac{2}{3} + \frac{4}{6}$ e $\frac{7}{12} + \frac{1}{6}$

f $\frac{8}{14} + \frac{3}{7}$ g $\frac{1}{4} + \frac{3}{5}$ h $\frac{3}{6} + \frac{4}{9}$ i $\frac{1}{2} + \frac{2}{3}$ j $\frac{4}{5} + \frac{1}{2}$

k $\frac{3}{4} - \frac{1}{2}$ l $\frac{4}{5} - \frac{3}{10}$ m $\frac{2}{3} - \frac{2}{6}$ n $\frac{9}{12} - \frac{3}{6}$ o $\frac{11}{14} - \frac{4}{7}$

p $\frac{3}{4} - \frac{2}{5}$ q $\frac{5}{6} - \frac{2}{9}$ r $\frac{1}{2} - \frac{1}{3}$ s $\frac{3}{5} - \frac{1}{2}$ t $\frac{5}{8} - \frac{1}{3}$

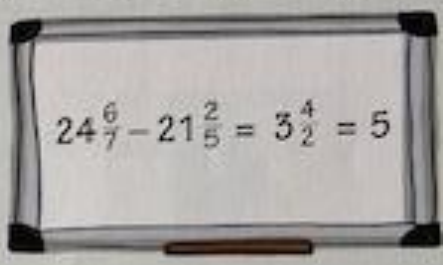
2 Look at your answers to Question 1. If any of them are improper fractions, write them as mixed numbers.

Challenge 2

1 Work out each of these mixed number calculations. Write each answer as a whole number and a proper fraction.

a $12\frac{3}{4} + 11\frac{4}{5}$	b $17\frac{4}{10} + 9\frac{3}{4}$	c $18\frac{2}{8} + 16\frac{7}{12}$	d $27\frac{7}{9} + 25\frac{4}{6}$
e $21\frac{2}{6} + 18\frac{3}{4}$	f $29\frac{5}{7} + 22\frac{3}{5}$	g $24\frac{12}{15} + 26\frac{4}{10}$	h $31\frac{3}{5} + 24\frac{4}{6}$
i $22\frac{3}{6} + 38\frac{5}{7}$	j $27\frac{3}{8} + 41\frac{1}{5}$	k $26\frac{3}{4} - 14\frac{2}{5}$	l $28\frac{9}{10} - 19\frac{3}{4}$
m $29\frac{5}{8} - 21\frac{5}{6}$	n $32\frac{3}{4} - 25\frac{2}{6}$	o $39\frac{3}{7} - 29\frac{4}{5}$	p $33\frac{2}{10} - 20\frac{8}{15}$

2 Sam has worked out the calculation on the white board incorrectly. How do you think he worked it out? What do you think he does not understand? Work out the answer correctly to make sure.



3 The tea urn in the school staffroom gets filled to the top every morning. It holds 6 litres of water. Each cup of tea or coffee uses $\frac{1}{20}$ of the water.

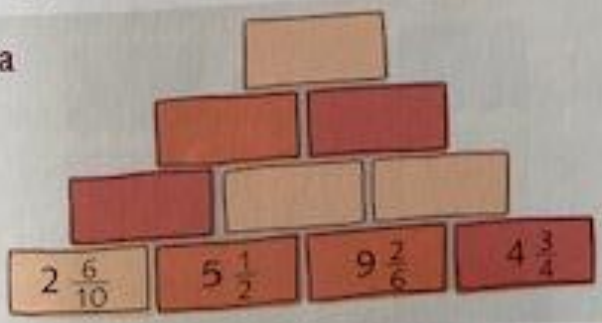
- At playtime, 7 people have a cup of coffee and 2 have a cup of tea.
- Then a teacher comes to fill a water jug with hot water. This uses up $\frac{1}{5}$ of the amount of water that was in the urn to start with.
- At lunchtime a teacher uses some hot water to make her soup. This uses up $\frac{1}{10}$ of a full urn.

What fraction of the water is now left in the urn?

Challenge 3

Copy and complete these addition fractions walls. Always write your answers as mixed numbers.

a



b