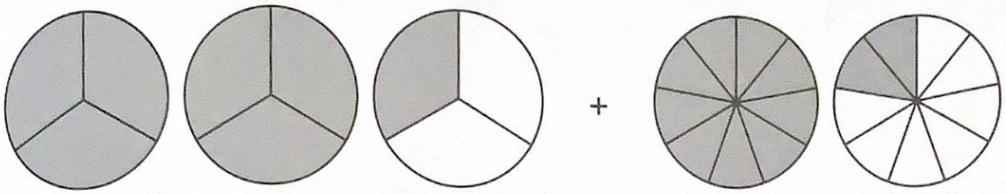
Adding fractions 3

1 Work out $2\frac{1}{3} + 1\frac{2}{9}$.



Change each number to an improper fraction first:

$2\frac{1}{3} = \frac{7}{3}$ $\qquad$ $1\frac{2}{9} = \frac{11}{9}$

Find a common denominator: $\frac{7}{3} = \frac{21}{9}$

Add the fractions: $\frac{21}{9} + \frac{11}{9} = \frac{32}{9}$

$= 3\frac{5}{9}$

So, $2\frac{1}{3} + 1\frac{2}{9} = 3\frac{5}{9}$

2 Convert $2\frac{3}{8}$ to an improper fraction to work out $\frac{1}{2} + 2\frac{3}{8}$.

$\frac{1}{2} + 2\frac{3}{8} = 2\frac{7}{8}$

$2\frac{3}{8} = \frac{19}{8}$

$\frac{19}{8} + \frac{1}{2} =$

$\frac{19}{8} + \frac{4}{8} = \frac{23}{8} = 2\frac{7}{8}$

3 Work out the following.

a) $2\frac{1}{4} + \frac{5}{8}$

$2\frac{1}{4} = \frac{9}{4}$ $\quad 9/4 = \frac{18}{8}$

$\frac{18}{8} + \frac{5}{8} = \frac{23}{8} = 2\frac{7}{8}$

b) $4\frac{7}{10} + 1\frac{1}{2}$

$\frac{47}{10} + \frac{3}{2} = \frac{47}{10} + \frac{15}{10} = \frac{62}{10}$

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

c) $4\frac{2}{5} + 1\frac{3}{20}$

$\frac{22}{5} + \frac{23}{20} =$

$\frac{88}{20} + \frac{23}{20} = \frac{111}{20} = 5\frac{11}{20}$

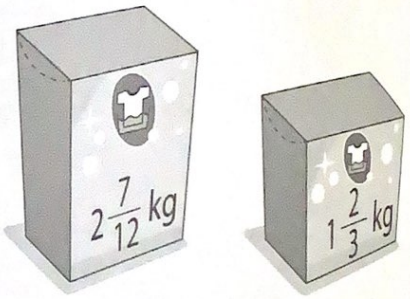
d) $\frac{7}{16} + 4\frac{3}{4}$

$\frac{7}{16} + \frac{19}{4} = \frac{7}{16} + \frac{76}{16}$

$\frac{76}{16} + \frac{7}{16} = \frac{83}{16} = 5\frac{3}{16}$

4 Washing powder is sold in two sizes.

What is the total weight of the two boxes?



$2\frac{7}{12} + 1\frac{2}{3} = \frac{31}{12} + \frac{5}{3}$

$= \frac{31}{12} + \frac{20}{12} = \frac{51}{12} = 4\frac{3}{12} = 4\frac{1}{4}$

The total weight of the two boxes is $4\frac{1}{4}$ kg.

5 Kate is adding $13\frac{2}{5}$ and $4\frac{7}{50}$.

She says, 'I think I will add the wholes and the parts instead of converting to improper fractions.'

Do you agree with Kate? Explain your answer.

Yes because if we convert them into improper fractions, they will get really big and I may make a mistake more easily. Adding the wholes and then the parts would be better.

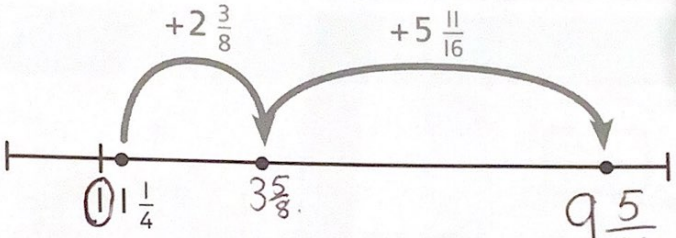
6 Find the missing fractions in the working out.

$$1\frac{5}{6} + 1\frac{7}{12}$$

$$= \frac{11}{6} + \frac{19}{12}$$

$$= \frac{22}{12} + \frac{19}{12} = \frac{41}{12} = 3\frac{5}{12}$$

7 Max is making jumps on a number line.



CHALLENGE

a) What number has Max finished on?

$1\frac{1}{4} = \frac{5}{4} + \frac{19}{8} = \frac{10}{8} + \frac{19}{8} = \frac{29}{8} = 3\frac{5}{8}$ $\frac{29}{8} = \frac{58}{16}$ $\frac{58}{16} + \frac{11}{16} = \frac{69}{16} = 4\frac{5}{16}$

$4\frac{5}{16} + 5 = 9\frac{5}{16}$

b) Max makes one more jump and lands on 12. How long was his jump?

$9\frac{5}{16} + \frac{11}{16} = 10$ $10 + 2 = 12$. $= 2\frac{11}{16}$.

Reflect

Which method do you prefer when adding $3\frac{9}{10}$ and $1\frac{3}{20}$?

Your answers will vary Choose the most effcuent method e.g + wholes & then parts