Four rules with fractions

1 Work out the missing total.

$\frac{2}{3}$	$\frac{2}{3}$	$\frac{2}{3}$	$\frac{2}{3}$	$2\frac{1}{3}$
				5

Show all the steps in your working.

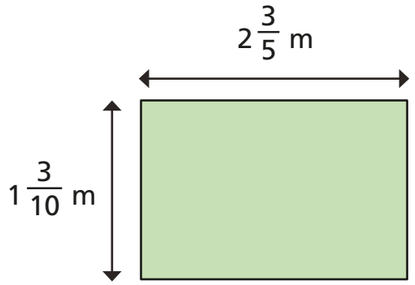
$\frac{2}{3} \times 3 = 2$

$2 + 3 = 5$

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

Explain your method to a partner.

2 Work out the perimeter of the rectangle.



$7\frac{4}{5}$ m

Explain your method to your partner.

Did you work it out in the same way?

3 Complete the calculations.

a) $\left(\frac{2}{3} + \frac{2}{3}\right) \times 3 =$ 4

b) $\left(\frac{2}{3} + \frac{2}{3}\right) \div 3 =$ $\frac{4}{9}$

c) $\frac{2}{3} + \frac{2}{3} \times 3 =$ $2\frac{2}{3}$

d) $\frac{2}{3} + \frac{2}{3} \div 3 =$ $\frac{8}{9}$

4 Jack mixes $\frac{2}{3}$ of a litre of orange juice and $\frac{3}{4}$ of a litre of apple juice.

He pours the juice into 5 glasses equally.

How much juice is in each glass?

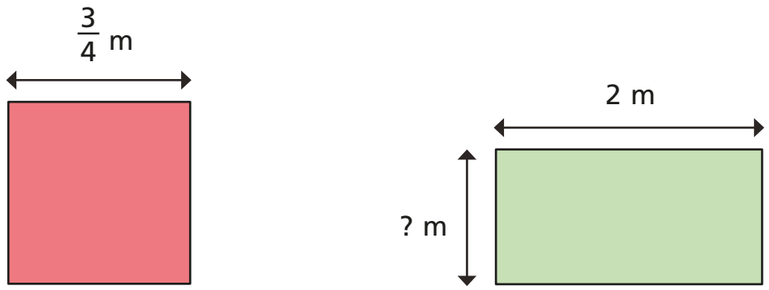
$\frac{2}{3} + \frac{3}{4} = \frac{17}{12}$

$\frac{17}{12} \div 5 = \frac{17}{60}$

$\frac{17}{60}$ L

5 The area of these two shapes are equal.

Find the height of the rectangle.



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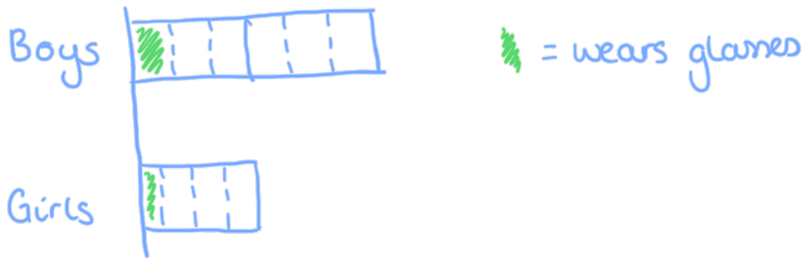
6 In a class, $\frac{2}{3}$ of the pupils are boys.

$\frac{1}{4}$ of the girls wear glasses and $\frac{1}{6}$ of the boys wear glasses.

Do more boys or girls wear glasses?

Explain your reasoning.



$\frac{2}{3} \times \frac{1}{6} = \frac{1}{9}$ $\frac{1}{3} \times \frac{1}{4} = \frac{1}{12}$ $\frac{1}{9} > \frac{1}{12}$

More boys wear glasses.

7 Work out the calculation.

$$\left(1\frac{3}{5} - \frac{7}{10}\right)^2$$

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8 Use what you know about working with fractions to explain, prove or disprove the following statements.

a) Half of a half of a half is an eighth.

$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{8}$ This is true.

b) Quarter of a half plus half of a quarter is a quarter.

$\frac{1}{4} \times \frac{1}{2} + \frac{1}{2} \times \frac{1}{4} = \frac{1}{8} + \frac{1}{8} = \frac{2}{8} = \frac{1}{4}$ This is true.

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1	2	5	6	8

Various answers. $\frac{\square}{\square} \times \square + \frac{\square}{\square}$

Explore the different totals you can make using each card once only.