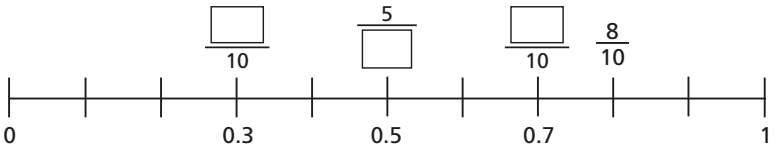
Use equivalence to add and subtract decimals and fractions

1 **a)** Fill in the boxes on the number line.



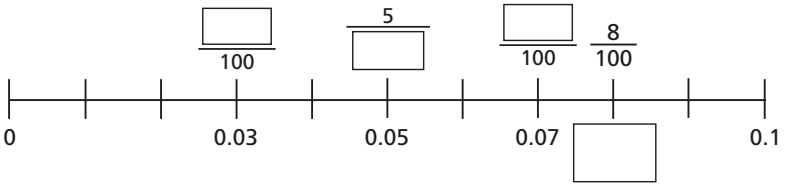
b) Work out the calculations.

Give your answers as decimals.

You could use the number line to help you.

$\frac{3}{10} + 0.5$ $1 - \frac{8}{10}$ $\frac{7}{10} + 0.3$

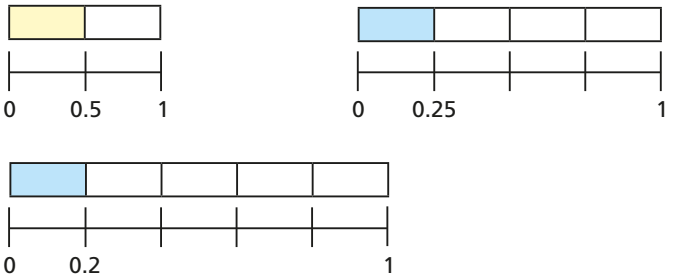
2 **a)** Fill in the boxes on the number line.



b) Work out the calculations. Give your answers as decimals.

$0.05 + \frac{3}{100}$ $0.1 - \frac{8}{100}$

3 Here are some bar models drawn above number lines.



a) Write each decimal as a fraction. You could use the bar models to help you.

0.5 0.25 0.2

b) Use the number lines and your answers to part a) to work out the calculations.

Give your answers as decimals.

$0.1 + \frac{1}{2}$ $\frac{1}{5} + 0.5$ $0.90 - \frac{1}{4}$

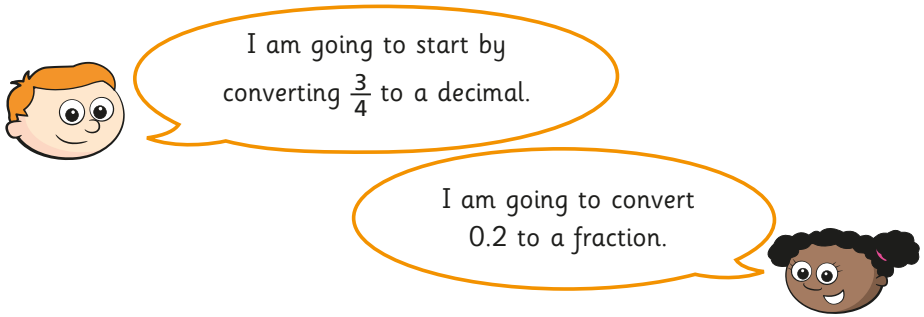
4 **a)** Work out $0.3 + \frac{3}{5}$

Give your answer as a decimal.

b) Work out $\frac{1}{6} + 0.75$

Give your answer as a fraction.

5 Ron and Whitney are working out the calculation $\frac{3}{4} - 0.2$



Ron's method

$\frac{3}{4} = 0.75$

$0.75 - 0.2 = 0.73$

Whitney's method

$0.2 = \frac{1}{5}$

$\frac{3}{4} - \frac{1}{5} = \frac{15}{20} - \frac{4}{20} = \frac{11}{20}$

a) What mistake has Ron made?

b) Convert Whitney's answer to a decimal.

Use equivalence to add and subtract decimals and fractions

a) Write each decimal as a fraction. You could use the bar models to help you.

0.5 0.25 0.2

b) Use the number lines and your answers to part a) to work out the calculations.

Give your answers as decimals.

$0.1 + \frac{1}{2}$ $\frac{1}{5} + 0.5$ $0.90 - \frac{1}{4}$

4 **a)** Work out $0.3 + \frac{3}{5}$

Give your answer as a decimal.

b) Work out $\frac{1}{6} + 0.75$

Give your answer as a fraction.

5 Ron and Whitney are working out the calculation $\frac{3}{4} - 0.2$

I am going to start by converting $\frac{3}{4}$ to a decimal.

I am going to convert 0.2 to a fraction.

Ron's method

$\frac{3}{4} = 0.75$

$0.75 - 0.2 = 0.73$

Whitney's method

$0.2 = \frac{1}{5}$

$\frac{3}{4} - \frac{1}{5} = \frac{15}{20} - \frac{4}{20} = \frac{11}{20}$

a) What mistake has Ron made?

b) Convert Whitney's answer to a decimal.

6 Work out the calculations. Give your answers as decimals.

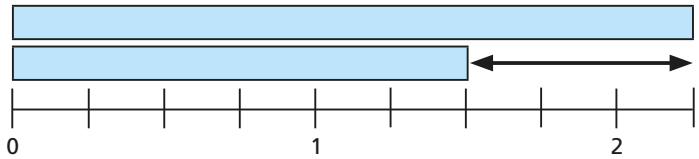
a) $0.6 - \frac{1}{2}$ **c)** $0.65 - \frac{1}{4}$

b) $0.7 - \frac{1}{5}$ **d)** $\frac{9}{10} - 0.25$

Did you convert the fraction to a decimal before or after doing the calculation?

Compare methods with a partner.

7 Here is a representation of a calculation.



Which of these is **not** the calculation shown?

$\frac{9}{4} - 1.5$ $2.1 - 1\frac{1}{2}$ $2.25 - \frac{3}{2}$ $2\frac{5}{20} - 1.50$

8 The same digit is missing from each box.

Which digits would give a terminating answer?

$0.\square + \frac{1}{\square}$

Can you explain why some digits don't give a terminating decimal?