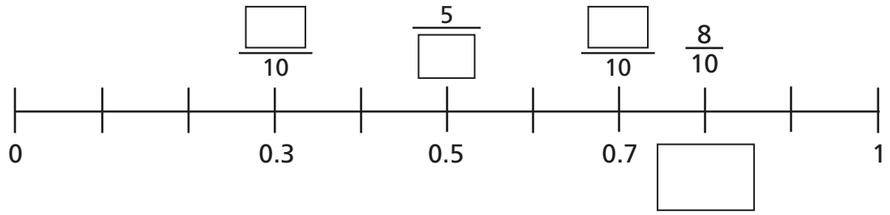
Use equivalence to add and subtract decimals and fractions

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



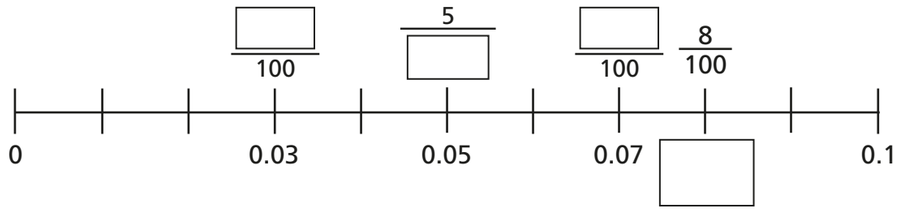
b) Work out the calculations.

Give your answers as decimals.

You could use the number line to help you.

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

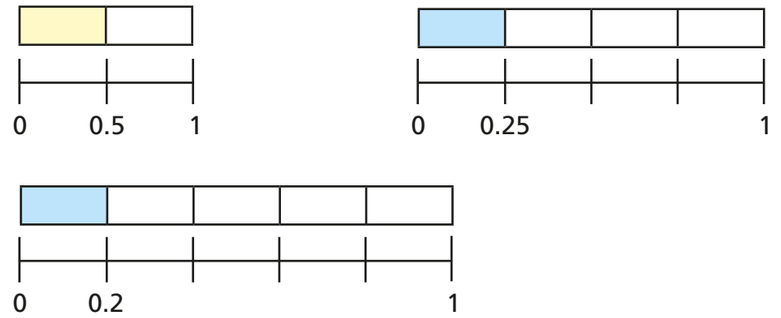
2 **a)** Fill in the boxes on the number line.



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 $\frac{3}{4} - 0.2$

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) $0.6 - \frac{1}{2}$

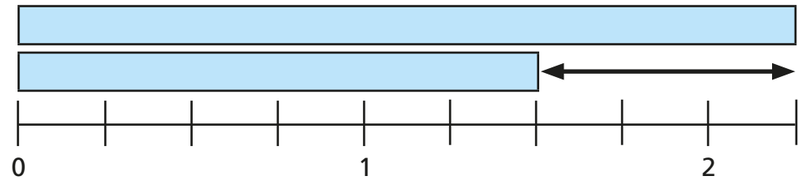
b) $0.7 - \frac{1}{5}$

c) $0.65 - \frac{1}{4}$

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? Circle your answer.

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

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?