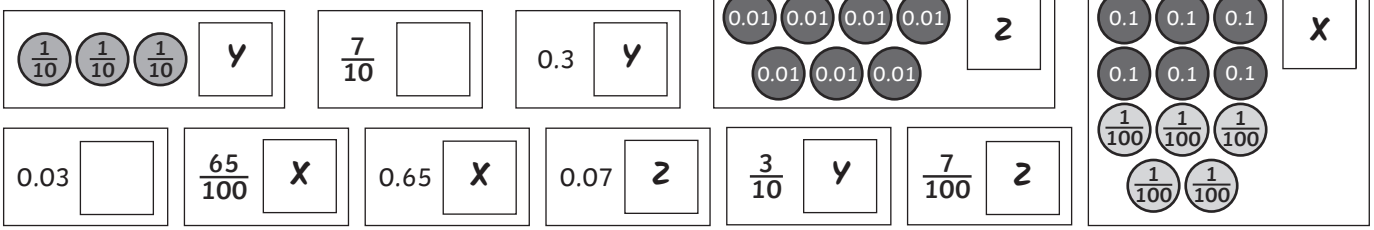
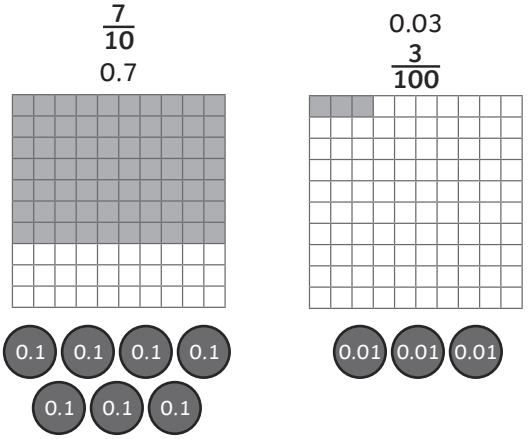
1) a)



b)



2)

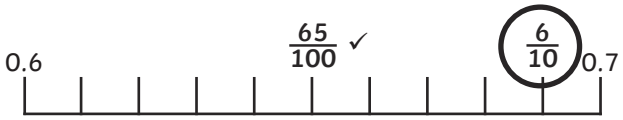
Decimal	0.9	*0.08*	*0.4*	0.49	0.04	*0.63*
Fraction	*9/10* or *90/100*	8/100	4/10	*49/100*	*4/100*	63/100

1)

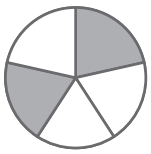
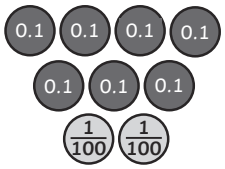
	✓ or ×	Explanation
$0.20 = \frac{2}{10}$	✓	*The zero in the hundredths column does not change the value of the number.*
$0.08 = \frac{8}{10}$	×	*The second digit after the decimal point is a hundredth, so it should be* $\frac{8}{100}$
$0.35 = \frac{35}{100}$	✓	
$0.7 = \frac{7}{100}$	×	*The first digit after the decimal point is a tenth, so it should be* $\frac{7}{10}$

2) a) *The first number line is divided into increments of one tenth. The first fraction should be* $\frac{2}{10}$.

b) *The second number line is divided into increments of one hundredth. The last fraction should be* $\frac{69}{100}$.



3) *There are lots of possible answers. This is an example:*

Number	Yes/No	Explanation
	*No*	$\frac{2}{5} = \frac{4}{10}$ *and* $\frac{4}{10}$ *is less than* $\frac{1}{2}$.
six-tenths	*Yes*	*six-tenths = 0.6* $\frac{1}{2}$ *= 0.5, 0.6 is greater than* $\frac{1}{2}$ *but less than 0.75.*
	*Yes*	*0.75 =* $\frac{75}{100}$. $\frac{72}{100}$ *is more than* $\frac{1}{2}$ $(\frac{50}{100})$ *and less than 0.75* $(\frac{75}{100})$.

1) *Multiple possible answers.*

A needs a decimal and a fraction greater than 0 and less than 0.25.

B needs a decimal and a fraction greater than 0.25 and less than $\frac{1}{2}$.

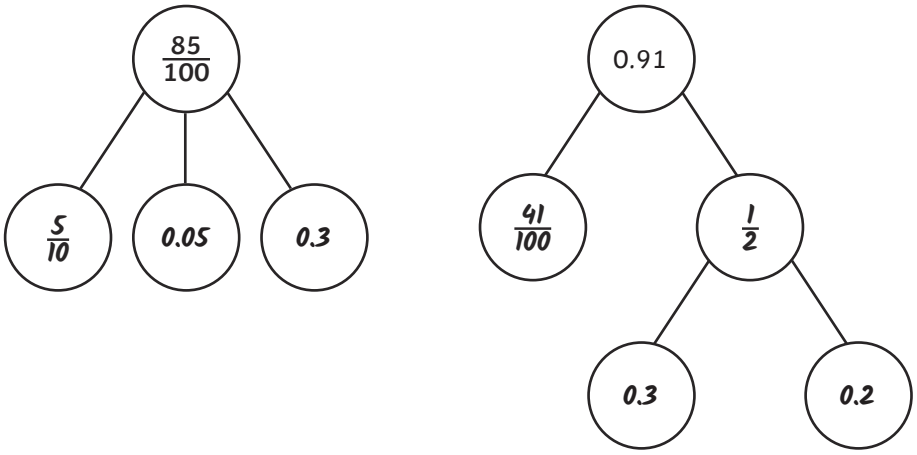
C needs a decimal and a fraction greater than $\frac{1}{2}$ and less than 0.75.

D needs a decimal and a fraction greater than 0.75 and less than 1.

2) a) 0.6 $\frac{45}{100}$ | 0.7 $\frac{2}{10}$ | 0.55 $\frac{33}{100}$ | 0.86 $\frac{38}{100}$

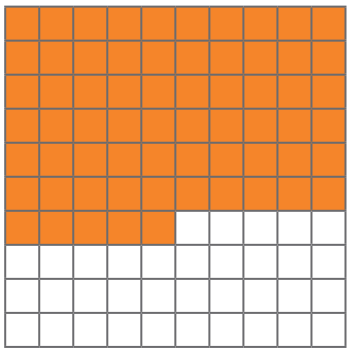
b) *0.86*

3)

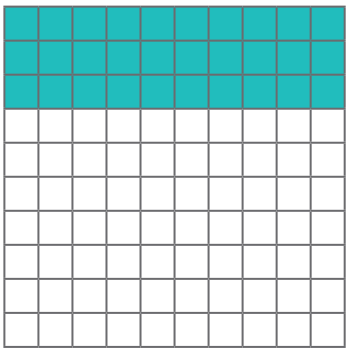


1) a) Write the letter X next to any representation that matches the hundred square labelled X.
Write the letter Y next to any representation that matches the hundred square labelled Y.
Write the letter Z next to any representation that matches the hundred square labelled Z.

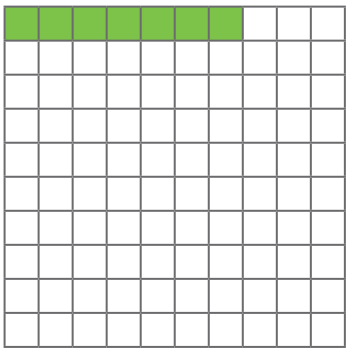
X

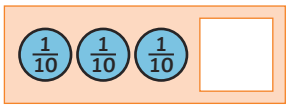


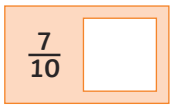
Y

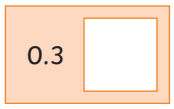


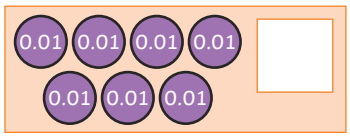
Z

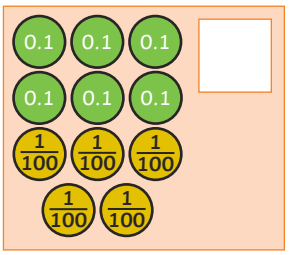


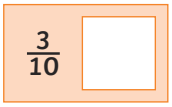


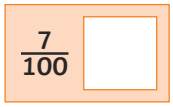












b) Two of the fractions above don't match any of the hundred squares.
Represent them in three different ways.

Fraction: ☐/☐

Fraction: ☐/☐

2) Complete this table.

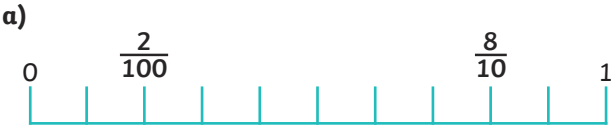
Decimal	0.9			0.49	0.04	
Fraction		$\frac{8}{100}$	$\frac{4}{10}$			$\frac{63}{100}$

1) Khatija has been writing decimals as fractions. Tick the conversions which are correct and explain any mistakes she has made.

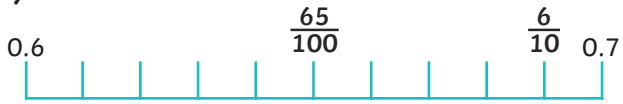
	✓ or ✗	Explanation
$0.20 = \frac{2}{10}$		
$0.08 = \frac{8}{10}$		
$0.35 = \frac{35}{100}$		
$0.7 = \frac{7}{100}$		

2) Terri has placed fractions on a decimal number line. Tick the ones which are correct. Draw a circle around those which are incorrect and explain what the right answer should be.

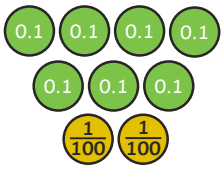
a)



b)



3) Adam is thinking of a number. It is greater than $\frac{1}{2}$ but less than 0.75. Which of these numbers could it be? Explain how you know if it is or isn't.

Number	Yes/No	Explanation
		
six-tenths		
		

1) Write a fraction and a decimal which would fit into each section of this number line:

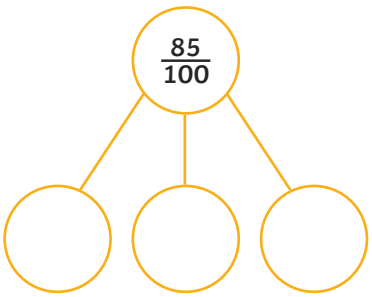
Section	Fraction	Decimal
A		
B		
C		
D		

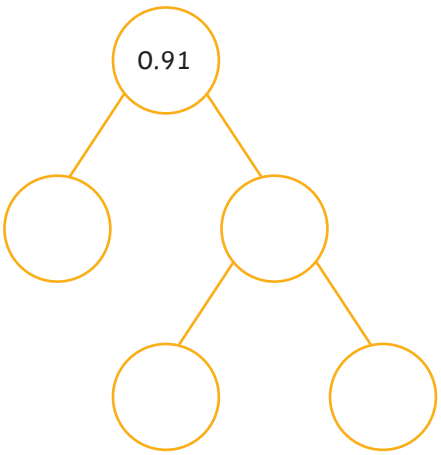
2) **a)** In each pair, draw a circle around the number which is closest to 0.5.

0.6 $\frac{45}{100}$	0.7 $\frac{2}{10}$	0.55 $\frac{33}{100}$	0.86 $\frac{38}{100}$

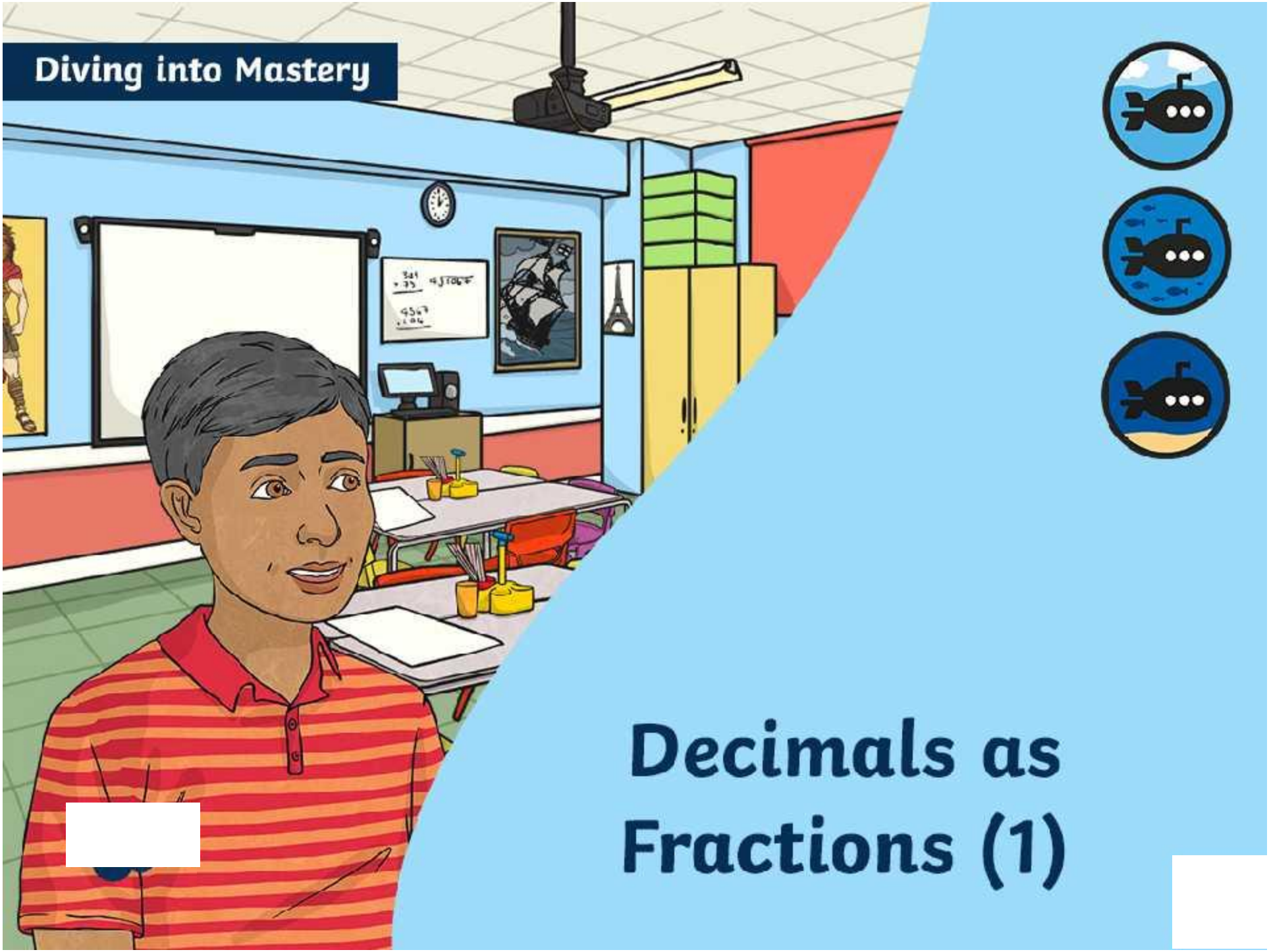
b) Which fraction or decimal out of all of the above is furthest from 0.5?

3) Complete the part-whole models. In each model use at least one decimal and one fraction:





Diving into Mastery



Decimals as Fractions (1)

Diving into Mastery Guidance for Educators

Each activity sheet is split into three sections, diving, deeper and deepest, which are represented by the following icons:

Diving

Deeper

Deepest

These carefully designed activities take your children through a learning journey, initially ensuring they are fluent with the key concept being taught; then applying this to a range of reasoning and problem-solving activities.

These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.

Aim

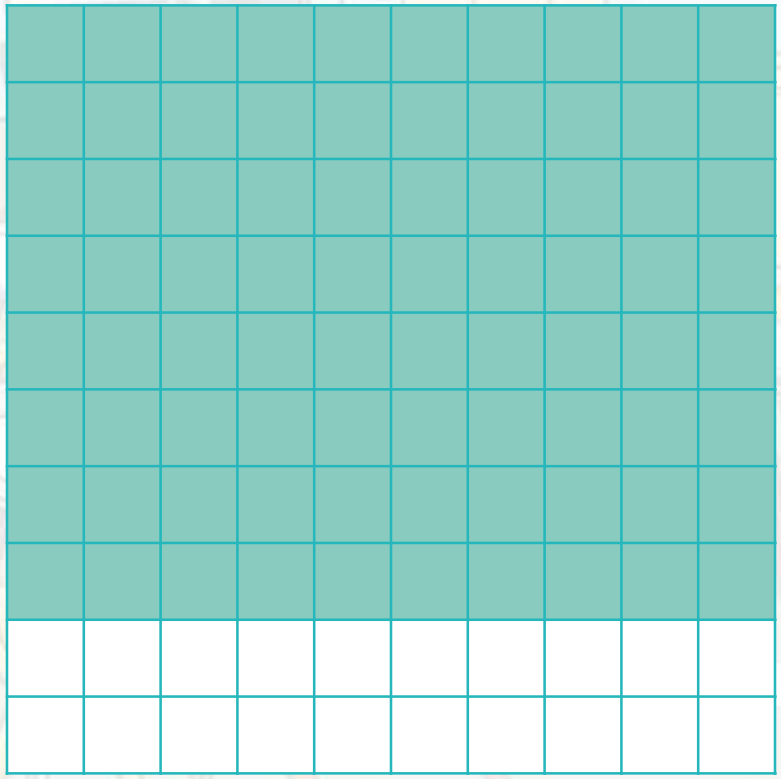
- Read and write decimal numbers as fractions

Decimals as Fractions (1) | Diving

Which representations show the same value as the hundred square in the middle?

$\frac{8}{10}$ ✓

0.8 ✓



$\frac{8}{100}$

✓

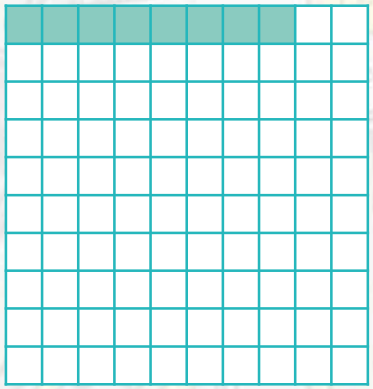
$\frac{80}{100}$ ✓

Decimals as Fractions (1) | Diving

What do you notice about these two representations?

$\frac{8}{100}$

How else can we represent these fractions?



0.08

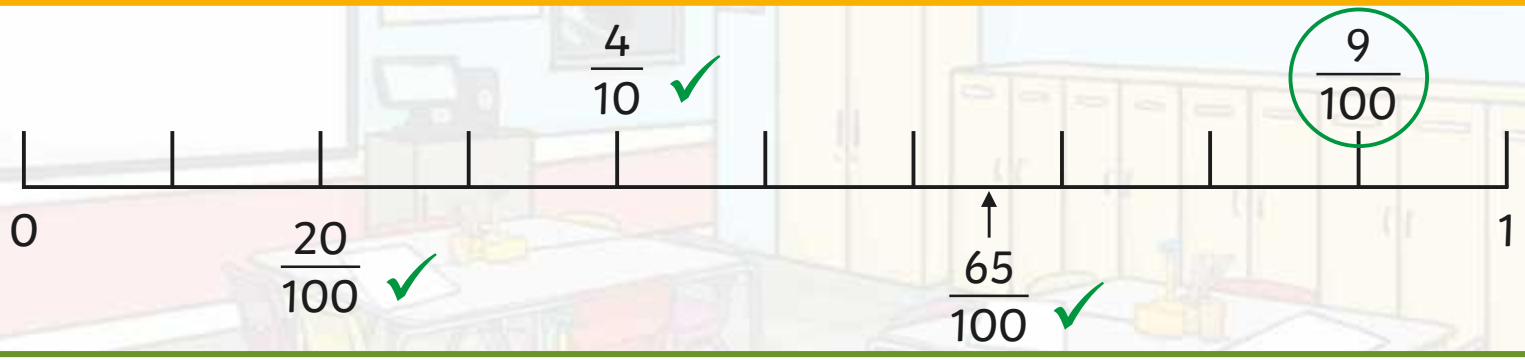
Decimals as Fractions (1) | Diving

Complete this table:

Decimal	Fraction
0.20	$\frac{2}{10}$ or $\frac{20}{100}$
0.05	$\frac{5}{100}$
0.6	$\frac{6}{10}$
0.73	$\frac{73}{100}$
0.45	$\frac{45}{100}$

Decimals as Fractions (1) | Deeper

Sam has placed fractions on a decimal number line. Tick the ones which are correct. Draw a circle around any which are incorrect and explain why they are incorrect.



The number line has been divided into ten increments. Each increment has the value of one-tenth. $\frac{9}{100}$ is less than $\frac{9}{10}$, which is the value of the last increment. Sam has either made a mistake in writing the fraction and meant to write $\frac{9}{10}$ or it should be placed just before the first increment as $\frac{1}{10} = \frac{10}{100}$.

Decimals as Fractions (1) | Deeper

Parvinder is thinking of a number. It is greater than $\frac{4}{10}$ but less than 0.65. Which of these representations could it be?

Explain how you know if it is or isn't.

No.
If we change all the numbers into hundredths:

$\frac{4}{10} = \frac{40}{100}$ $0.65 = \frac{65}{100}$ $0.9 = \frac{90}{100}$

$\frac{90}{100}$ does not fit between $\frac{4}{10}$ and 0.65.

fifty-five hundredths

Yes.
If we change all the numbers into hundredths:

$\frac{4}{10} = \frac{40}{100}$ $0.65 = \frac{65}{100}$

$\frac{55}{100}$ does fit between $\frac{4}{10}$ and 0.65.

Decimals as Fractions (1) | Deepest

Write a fraction and a decimal which would fit into each section of this number line:

There are multiple possible answers.

D needs a decimal and a fraction greater than 0.6 and less than 0.8.

e.g D = 0.7 and $\frac{7}{10}$.

Decimals as Fractions (1) | Deepest

In each pair, draw a circle around the number which is closest to $\frac{4}{10}$.

0.3	$\frac{55}{100}$
$\frac{3}{10}$	0.47

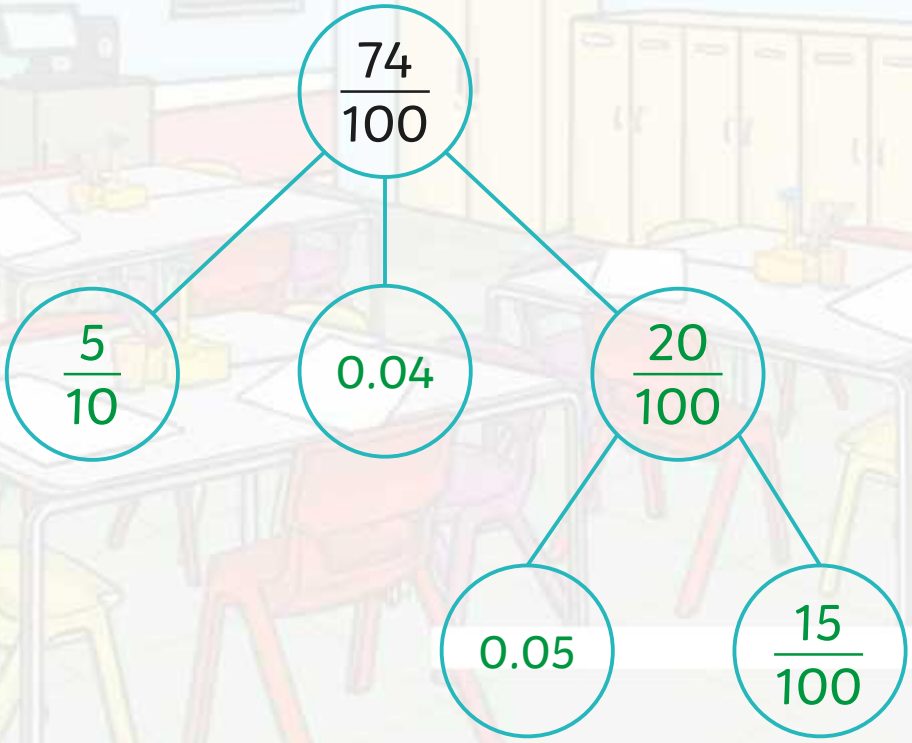
Which fraction or decimal out of all of the above is furthest away from $\frac{4}{10}$?

$\frac{55}{100}$

Decimals as Fractions (1) | Deepest

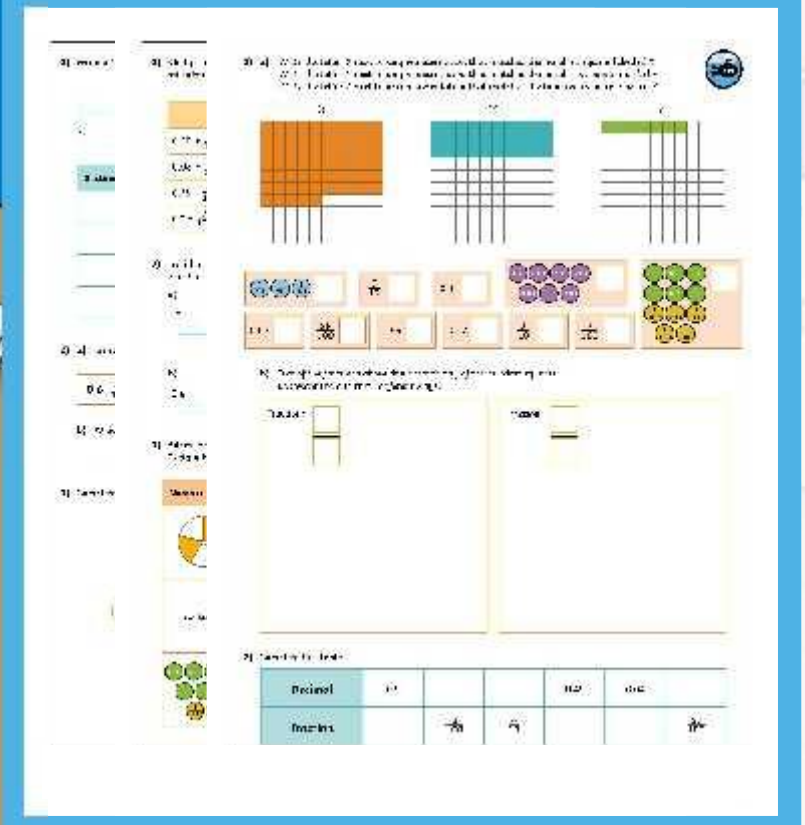
Complete the part-whole model.
Use at least one decimal and one fraction:

There are lots of different ways to answer this question!

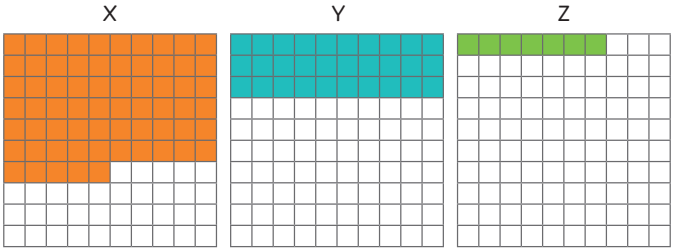


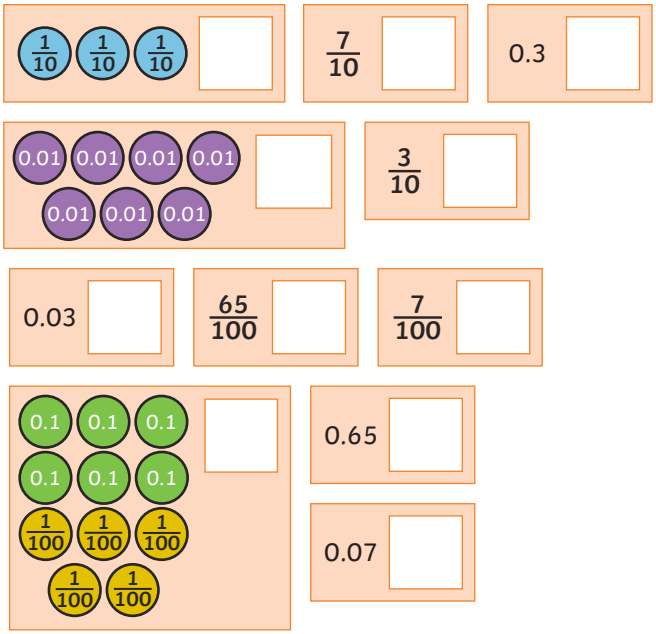
Decimals as Fractions (1)

Dive in by completing your own activity!



1) a) Write the letter X next to any representation that matches the hundred square labelled X.
Write the letter Y next to any representation that matches the hundred square labelled Y.
Write the letter Z next to any representation that matches the hundred square labelled Z.



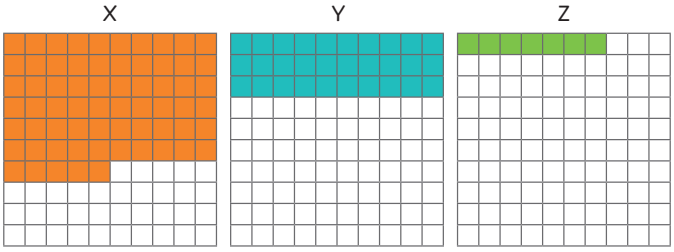


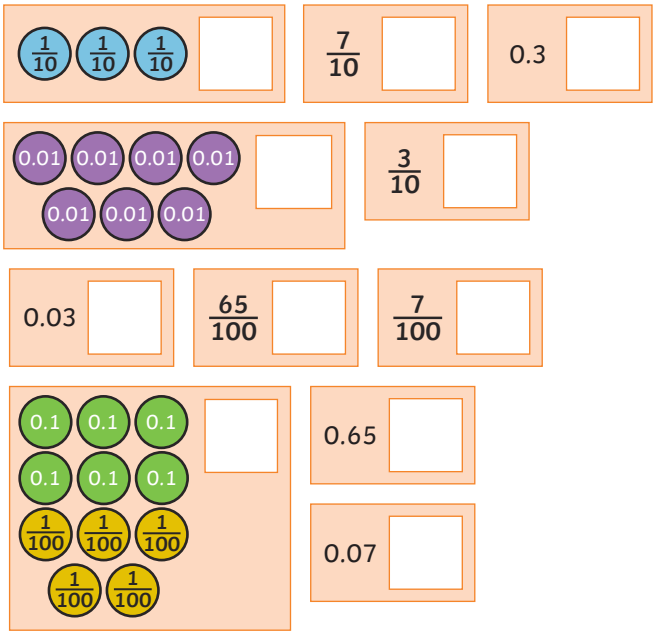
b) Two of the fractions above don't match any of the hundred squares. Represent them in three different ways.

2) Complete this table.

Decimal	Fraction
0.9	
	$\frac{8}{100}$
	$\frac{4}{10}$
0.49	
0.04	
	$\frac{63}{100}$

1) a) Write the letter X next to any representation that matches the hundred square labelled X.
Write the letter Y next to any representation that matches the hundred square labelled Y.
Write the letter Z next to any representation that matches the hundred square labelled Z.





b) Two of the fractions above don't match any of the hundred squares. Represent them in three different ways.

2) Complete this table.

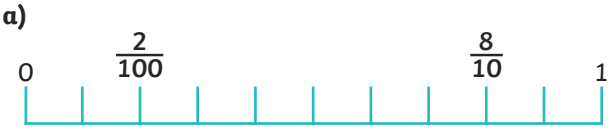
Decimal	Fraction
0.9	
	$\frac{8}{100}$
	$\frac{4}{10}$
0.49	
0.04	
	$\frac{63}{100}$

1) Khatija has been writing decimals as fractions. Tick the conversions which are correct and explain in your book any mistakes she has made.

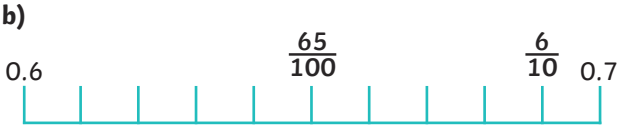
		✓ or ✗
a)	$0.20 = \frac{2}{10}$	
b)	$0.08 = \frac{8}{10}$	
c)	$0.35 = \frac{35}{100}$	
d)	$0.7 = \frac{7}{100}$	

2) Terri has placed fractions on a decimal number line. Tick the ones which are correct. Draw a circle around those which are incorrect and explain what the right answer should be.

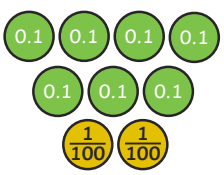
a)



b)



3) Adam is thinking of a number. It is greater than $\frac{1}{2}$ but less than 0.75. Which of these numbers could it be? Explain how you know if it is or isn't.

	Number	Yes/No
a)		
b)	six-tenths	
c)		

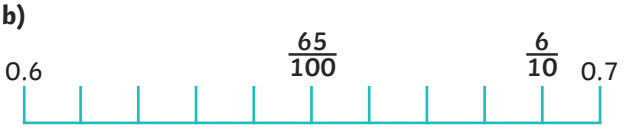
1) Khatija has been writing decimals as fractions. Tick the conversions which are correct and explain in your book any mistakes she has made.

		✓ or ✗
a)	$0.20 = \frac{2}{10}$	
b)	$0.08 = \frac{8}{10}$	
c)	$0.35 = \frac{35}{100}$	
d)	$0.7 = \frac{7}{100}$	

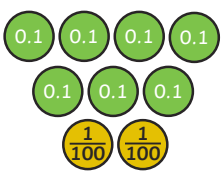
2) Terri has placed fractions on a decimal number line. Tick the ones which are correct. Draw a circle around those which are incorrect and explain what the right answer should be.

a)

b)



3) Adam is thinking of a number. It is greater than $\frac{1}{2}$ but less than 0.75. Which of these numbers could it be? Explain how you know if it is or isn't.

	Number	Yes/No
a)		
b)	six-tenths	
c)		

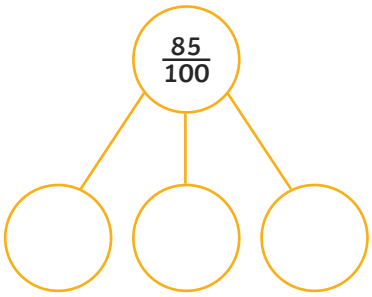
1) Write a fraction and a decimal which would fit into each section of this number line. Write these in in your book.

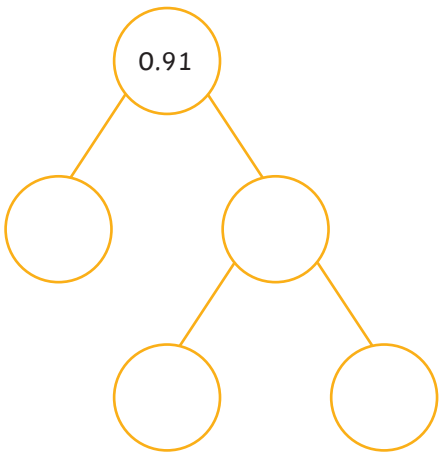
2) **a)** In each pair, draw a circle around the number which is closest to 0.5.

0.6 $\frac{45}{100}$	0.7 $\frac{2}{10}$
0.55 $\frac{33}{100}$	0.86 $\frac{38}{100}$

b) Which fraction or decimal out of all of the above is furthest from 0.5?

3) Complete the part-whole models. In each model use at least one decimal and one fraction:





1) Write a fraction and a decimal which would fit into each section of this number line. Write these in in your book.

2) **a)** In each pair, draw a circle around the number which is closest to 0.5.

0.6 $\frac{45}{100}$	0.7 $\frac{2}{10}$
0.55 $\frac{33}{100}$	0.86 $\frac{38}{100}$

b) Which fraction or decimal out of all of the above is furthest from 0.5?

3) Complete the part-whole models. In each model use at least one decimal and one fraction: