Decimals up to 2 d.p.

1 What number is represented on the place value chart?

Ones	Tenths	Hundredths
	0.1 0.1	0.01 0.01 0.01
0	2	3

Complete the sentences.

There are ☐ ones, ☐ tenths and ☐ hundredths.

The number is ☐.

2 Represent these numbers on a place value chart.

Complete the sentences.

a) 0.56

There are ☐ ones, ☐ tenths and ☐ hundredths.

b) 0.08

There are ☐ ones, ☐ tenths and ☐ hundredths.

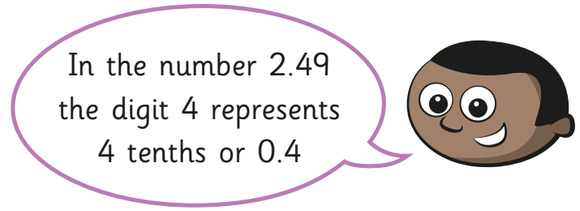
c) 1.48

There is ☐ one, ☐ tenths and ☐ hundredths.

d) 2.07

There are ☐ ones, ☐ tenths and ☐ hundredths.

3 Mo is thinking about tenths and hundredths.



What is the value of the digit 4 in each of these numbers?

a) 14.8 _____ **d)** 42.03 _____

b) 13.74 _____ **e)** 106.48 _____

c) 8.04 _____ **f)** 176.4 _____

4 **a)** Circle the number that has 5 in the tenths position.

53 **5.3** **0.53** **0.35**

b) Write three numbers that have 3 in the hundredths position.

_____

5 Complete the calculations.

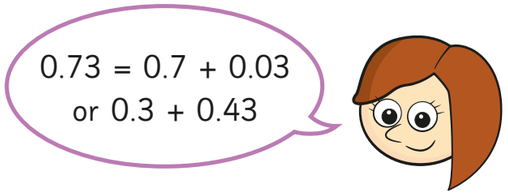
a) 0.64 = 0.6 + ☐

b) 0.53 = 0.5 + ☐

c) 0.3 + 0.05 = ☐

d) 0.06 + 0.8 = ☐

6 Rosie is finding different ways to partition 0.73

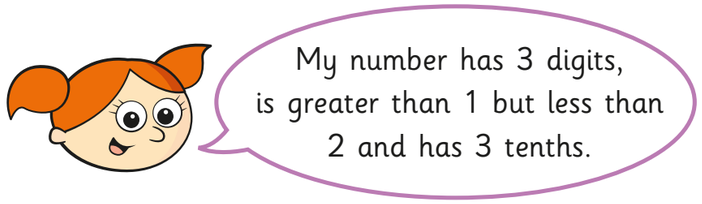


Ones	Tenths	Hundredths
0	7	3

In what other ways can 0.73 be partitioned?

List as many ways as you can below.

7 Alex is thinking of a number.



a) What number could Alex be thinking of?
Talk about it with a partner.

b) Write all the possible numbers Alex could be thinking of.

c) Write another clue that would mean Alex's number is 1.34

8 Match the words to the numerals.

5 ones, 6 tenths and 5 hundredths	0.56
5 tenths and 6 hundredths	60.05
5 ones, 5 tenths and 6 hundredths	5.56
6 tens and 5 hundredths	5.65

9 Annie has three digit cards.

0	2	5

Are the statements true or false? Explain your answers.

a) The largest number Annie can make is 5.02

b) The smallest number Annie can make is 0.25

c) Annie can make six different numbers.

Decimals up to 2 d.p.

1 What number is represented on the place value chart?

Ones	Tenths	Hundredths
	0.1 0.1	0.01 0.01 0.01
0	2	3

Complete the sentences.

There are [0] ones, [2] tenths and [3] hundredths.

The number is [0·23].

2 Represent these numbers on a place value chart.

Complete the sentences.

a) 0.56

There are [0] ones, [5] tenths and [6] hundredths.

b) 0.08

There are [0] ones, [0] tenths and [8] hundredths.

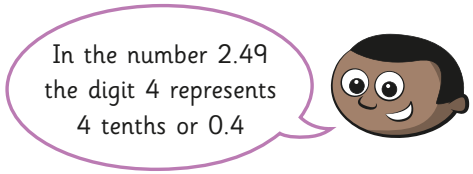
c) 1.48

There is [1] one, [4] tenths and [8] hundredths.

d) 2.07

There are [2] ones, [0] tenths and [7] hundredths.

3 Mo is thinking about tenths and hundredths.



What is the value of the digit 4 in each of these numbers?

a) 14.8 4 ones (4)

b) 13.74 4 hundredths (0·04)

c) 8.04 4 hundredths (0·04)

d) 42.03 4 tens (40)

e) 106.48 4 tenths (0·4)

f) 176.4 4 tenths (0·4)

4 **a)** Circle the number that has 5 in the tenths position.

53 **5.3** **0.53** **0.35**

b) Write three numbers that have 3 in the hundredths position.

0·53, 0·93, 17·03

5 Complete the calculations.

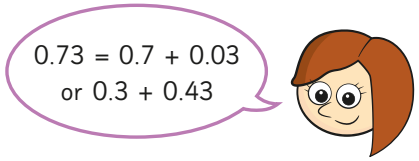
a) 0.64 = 0.6 + [0·04]

b) 0.53 = 0.5 + [0·03]

c) 0.3 + 0.05 = [0·35]

d) 0.06 + 0.8 = [0·86]

6 Rosie is finding different ways to partition 0.73



Ones	Tenths	Hundredths
0	7	3

In what other ways can 0.73 be partitioned?

List as many ways as you can below.

0·73 = 0·7 + 0·03

0·73 = 0·6 + 0·13

0·73 = 0·5 + 0·23

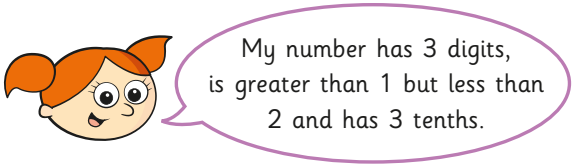
0·73 = 0·4 + 0·33

0·73 = 0·3 + 0·43

0·73 = 0·2 + 0·53

0·73 = 0·1 + 0·63

7 Alex is thinking of a number.



a) What number could Alex be thinking of?
Talk about it with a partner.

b) Write all the possible numbers Alex could be thinking of.

1·31 1·32 1·33 1·34 1·35

1·36 1·37 1·38 1·39

c) Write another clue that would mean Alex's number is 1.34

It has 4 hundredths.

8 Match the words to the numerals.

5 ones, 6 tenths and 5 hundredths	0.56
5 tenths and 6 hundredths	60.05
5 ones, 5 tenths and 6 hundredths	5.56
6 tens and 5 hundredths	5.65

9 Annie has three digit cards.

0	2	5

Are the statements true or false? Explain your answers.

a) The largest number Annie can make is 5.02

False. 5·20 > 5·02

b) The smallest number Annie can make is 0.25

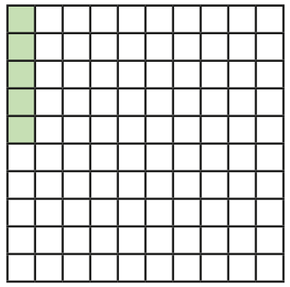
True. The only other number with 0 ones is 0·52 which is greater than 0·25

c) Annie can make six different numbers.

True 0·25 0·52 2·05 2·50 5·02 5·20

Decimals as fractions (1)

1 The hundred square represents 1 whole.

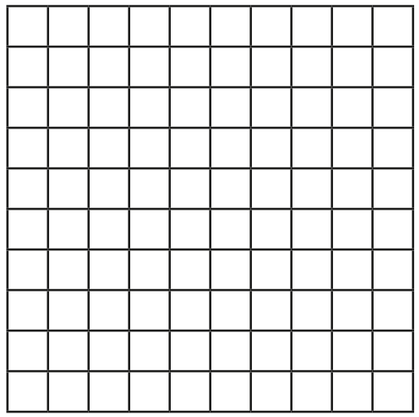


a) What fraction is represented by the shaded squares?

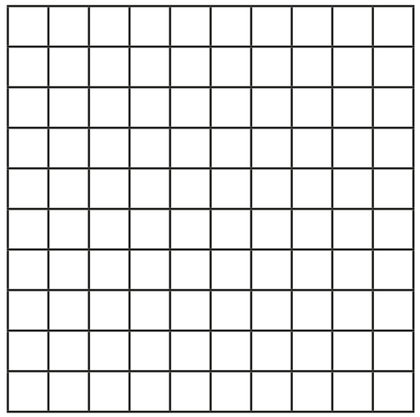
b) Convert the fraction to a decimal.

2 Colour the grid to represent the fraction and the decimal.

a) $\frac{7}{100}$



b) 0.17



3 What fractions and decimals do the counters represent?

a)

fraction = ☐ decimal = ☐

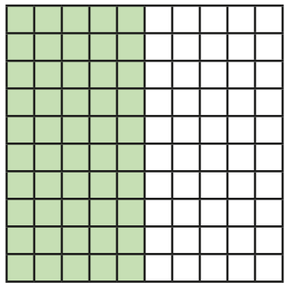
b)

fraction = ☐ decimal = ☐

c)

fraction = ☐ decimal = ☐

4 Amir has coloured part of a hundred square.

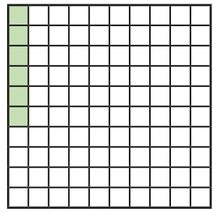


a) What fraction is represented by the coloured squares? $\frac{\square}{100}$

b) Write this fraction in a different way.

c) Write the fraction as a decimal.

5 Huan says he has coloured 0.6 of the hundred square.



Explain the mistake that Huan has made.

_____

_____

6 Write <, > or = to complete the statements.

a) 0.4 ◯ $\frac{40}{100}$

b) 0.02 ◯ $\frac{20}{100}$

c) 0.6 ◯ $\frac{6}{10}$

d) 0.5 ◯ $\frac{5}{100}$

e) 0.88 ◯ $\frac{88}{100}$

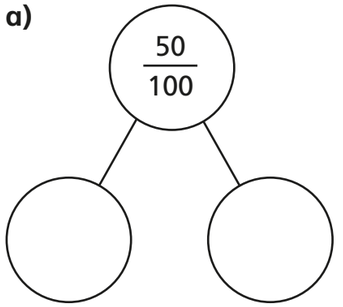
f) 0.88 ◯ $\frac{89}{100}$

7 Complete the table.

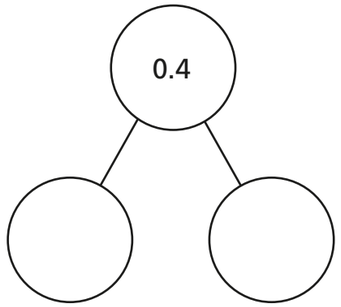
Fifths	Tenths	Decimals
$\frac{1}{5}$	$\frac{\square}{10}$	0.2
$\frac{\square}{5}$	$\frac{4}{10}$	
		0.6
$\frac{4}{5}$	$\frac{8}{\square}$	

8 Complete the part-whole models using fractions or decimals.

a)

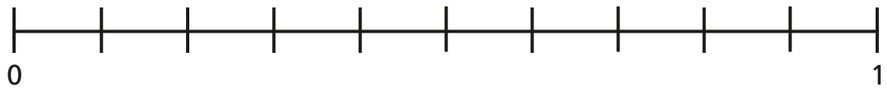


b)



Compare answers with a partner.

9 Here is a number line.

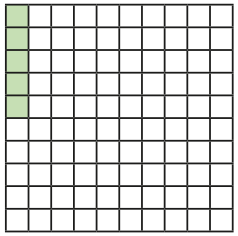


0.3	0.75	0.15	1.0

Draw arrows from the numbers to show their place on the line.

Decimals as fractions (1)

1 The hundred square represents 1 whole.

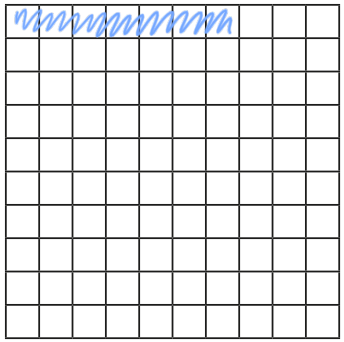


a) What fraction is represented by the shaded squares? $\frac{5}{100}$

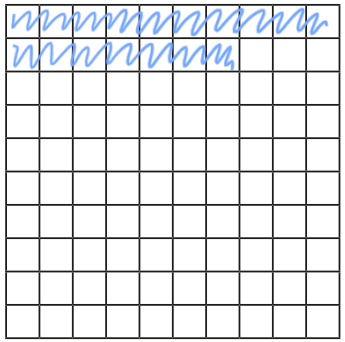
b) Convert the fraction to a decimal. 0·05

2 Colour the grid to represent the fraction and the decimal.

a) $\frac{7}{100}$



b) 0.17



3 What fractions and decimals do the counters represent?

a) $\frac{1}{100}$ $\frac{1}{100}$ $\frac{1}{100}$ $\frac{1}{100}$

fraction = $\frac{4}{100}$ decimal = 0·04

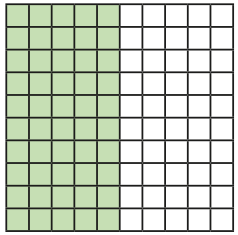
b) $\frac{1}{100}$ $\frac{1}{100}$ $\frac{1}{100}$ $\frac{1}{100}$ $\frac{1}{100}$ $\frac{1}{100}$

fraction = $\frac{6}{100}$ decimal = 0·06

c) $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$

fraction = $\frac{7}{10}$ decimal = 0·7

4 Amir has coloured part of a hundred square.

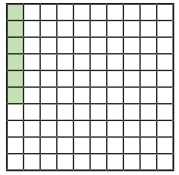


a) What fraction is represented by the coloured squares? $\frac{50}{100}$

b) Write this fraction in a different way. $\frac{5}{10}$

c) Write the fraction as a decimal. 0·5

5 Huan says he has coloured 0.6 of the hundred square.



Explain the mistake that Huan has made.

He has coloured in 6 hundredths not 6 tenths.

6 Write <, > or = to complete the statements.

a) 0.4 (=) $\frac{40}{100}$

b) 0.02 (<) $\frac{20}{100}$

c) 0.6 (=) $\frac{6}{10}$

d) 0.5 (>) $\frac{5}{100}$

e) 0.88 (=) $\frac{88}{100}$

f) 0.88 (<) $\frac{89}{100}$

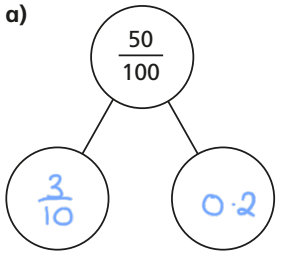
7 Complete the table.

Fifths	Tenths	Decimals
$\frac{1}{5}$	$\frac{2}{10}$	0.2
$\frac{2}{5}$	$\frac{4}{10}$	0.4
$\frac{3}{5}$	$\frac{6}{10}$	0.6
$\frac{4}{5}$	$\frac{8}{10}$	0.8

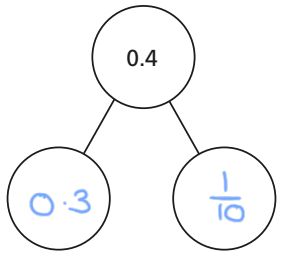
8 Complete the part-whole models using fractions or decimals.

Eg.

a)

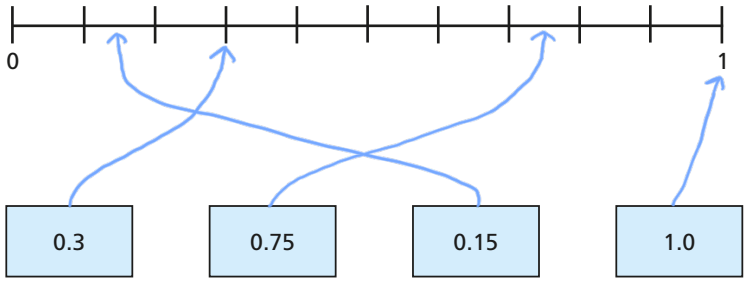


b)



Compare answers with a partner.

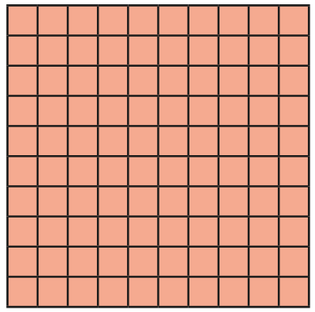
9 Here is a number line.



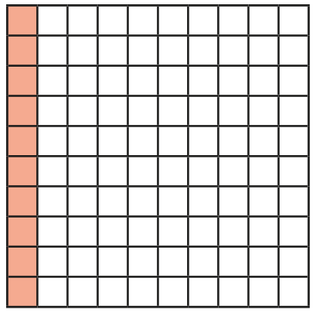
Draw arrows from the numbers to show their place on the line.

Decimals as fractions (2)

1 This grid represents 1

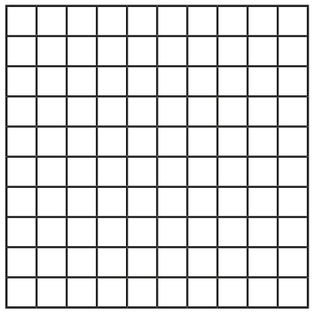


This grid represents 0.1 or $\frac{10}{100}$ or $\frac{1}{10}$

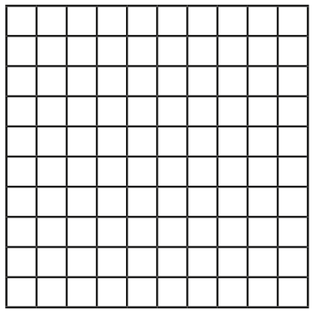


Colour the hundred squares to represent the fractions.

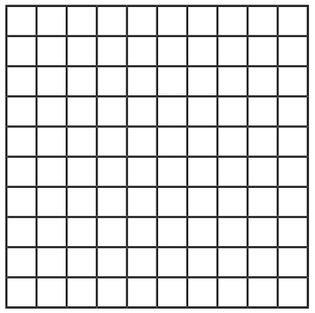
a) $\frac{2}{100}$



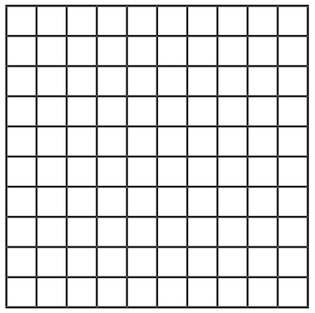
b) $\frac{2}{10}$



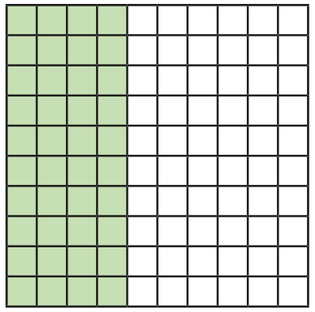
c) $\frac{20}{100}$



d) $\frac{90}{100}$



2 Complete the numbers to show how much of the square is shaded.



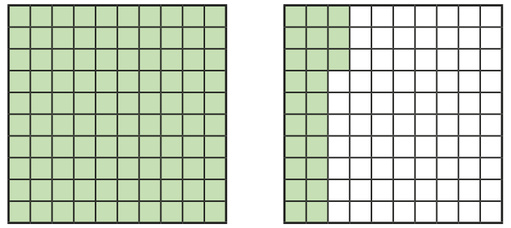
$\frac{\square}{100}$

$\frac{\square}{10}$

0._

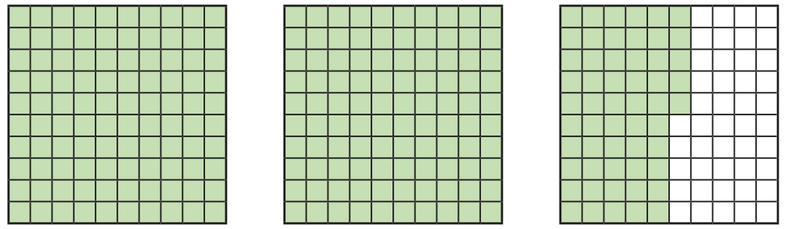
3 What fractions and decimals are represented?

a)



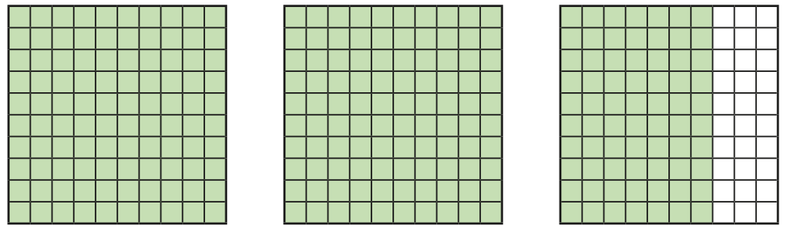
$1\frac{23}{100} = \square$

b)



$\square \; \frac{\square}{100} = \square$

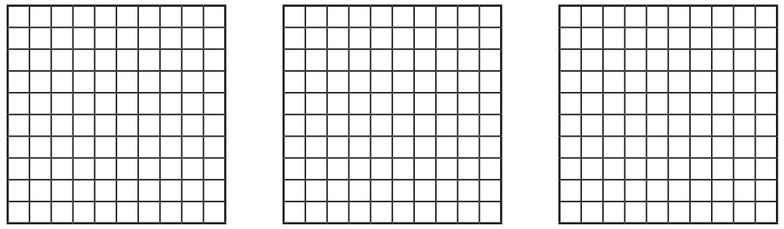
c)



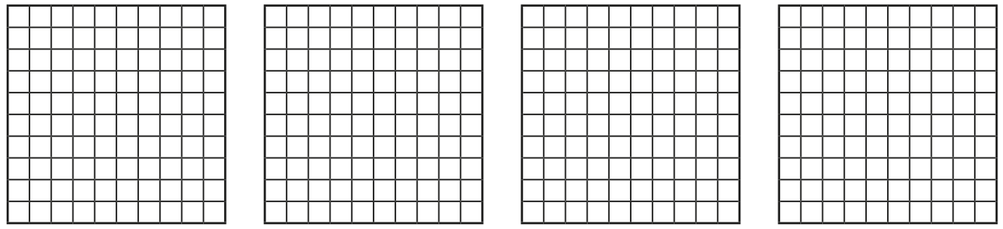
$\square \; \frac{\square}{10} = \square$

4

a) Represent 2.15

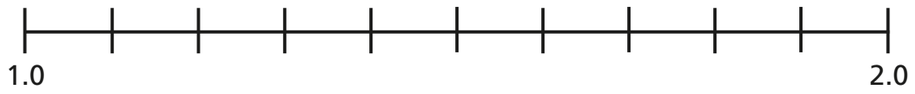


b) Represent $3\frac{7}{10}$



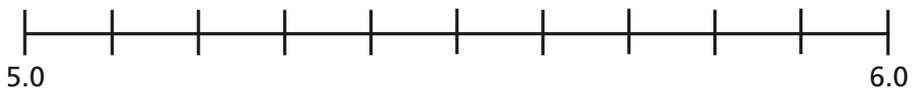
5 **a)** Label the number line with the decimals.

1.3	1.6	1.85	1.98



b) Label the number line with the fractions.

$5\frac{1}{10}$	$5\frac{1}{2}$	$5\frac{73}{100}$	$\frac{590}{100}$



6 Complete the table.

Decimal	Decimal (expanded form)	Fraction	Fraction (expanded form)	In words
2.13	2 + 0.1 + 0.03	$2\frac{13}{100}$	$2 + \frac{1}{10} + \frac{3}{100}$	2 ones, 1 tenth and 3 hundredths
4.37		$4\frac{\square}{100}$		
	5 + 0.6 + 0.02			
				8 ones and 2 hundredths

7 Write the decimals as fractions.

Give your answer as a mixed number.

a) 32.6 = $\square\ \frac{\square}{10}$

b) 2.03 = $\square\ \frac{\square}{100}$

c) 13.08 = $\square\ \frac{\square}{100}$

d) 3.98 = $\square\ \frac{\square}{100}$

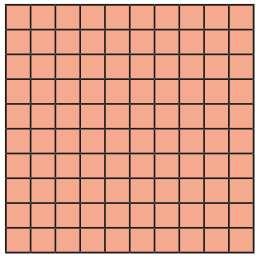
8 Use the digits 3, 4 and 5 to complete the decimal number.

$\square\ \square . 0\ \square$

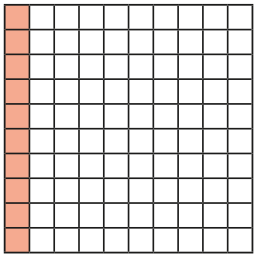
How many different numbers can you make?

Decimals as fractions (2)

1 This grid represents 1

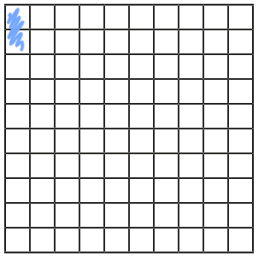


This grid represents 0.1 or $\frac{10}{100}$ or $\frac{1}{10}$

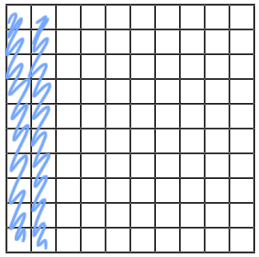


Colour the hundred squares to represent the fractions.

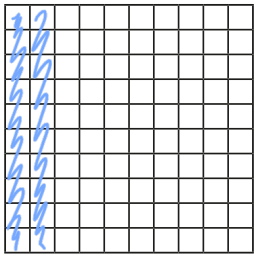
a) $\frac{2}{100}$



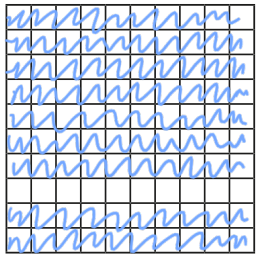
c) $\frac{20}{100}$



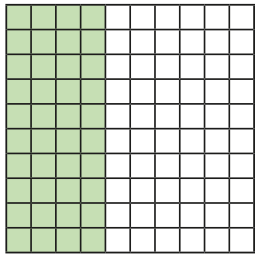
b) $\frac{2}{10}$



d) $\frac{90}{100}$



2 Complete the numbers to show how much of the square is shaded.



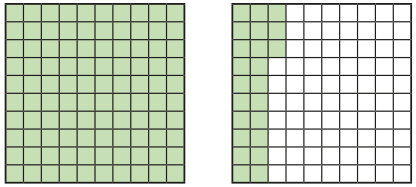
$\frac{40}{100}$

$\frac{4}{10}$

0.4

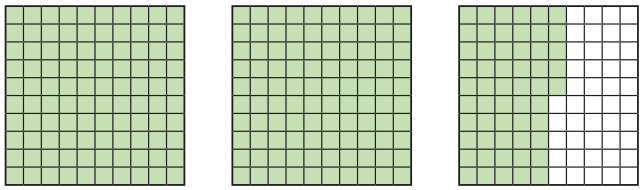
3 What fractions and decimals are represented?

a)



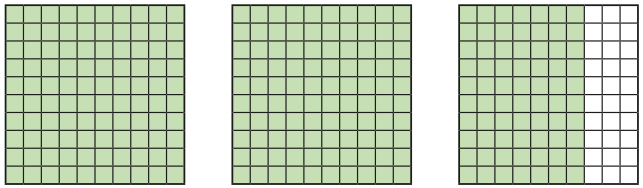
$1\frac{23}{100} = 1.23$

b)



$2\frac{55}{100} = 2.55$

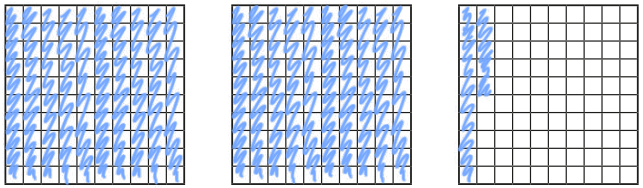
c)



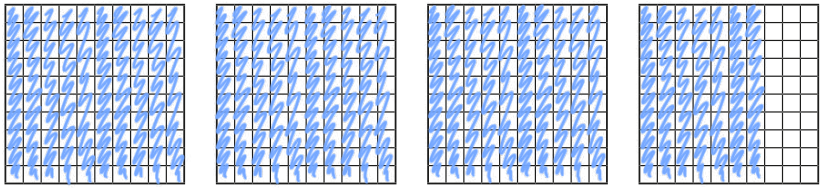
$2\frac{7}{10} = 2.7$

4

a) Represent 2.15

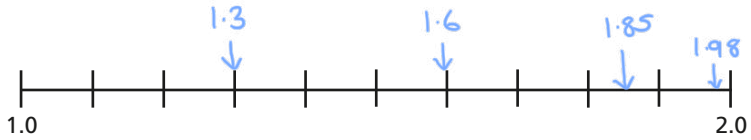


b) Represent $3\frac{7}{10}$



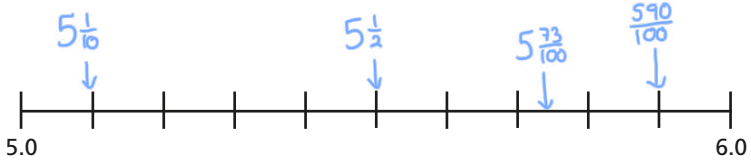
5 **a)** Label the number line with the decimals.

1.3 | 1.6 | 1.85 | 1.98



b) Label the number line with the fractions.

$5\frac{1}{10}$ | $5\frac{1}{2}$ | $5\frac{73}{100}$ | $\frac{590}{100}$



6 Complete the table.

Decimal	Decimal (expanded form)	Fraction	Fraction (expanded form)	In words
2.13	2 + 0.1 + 0.03	$2\frac{13}{100}$	$2 + \frac{1}{10} + \frac{3}{100}$	2 ones, 1 tenth and 3 hundredths
4.37	4+0·3+0·07	$4\frac{37}{100}$	$4 + \frac{3}{10} + \frac{7}{100}$	4 ones, 3 tenths and 7 hundredths
5·62	5 + 0.6 + 0.02	$5\frac{62}{100}$	$5 + \frac{6}{10} + \frac{2}{100}$	5 ones, 6 tenths and 2 hundredths
8·02	8+0·02	$8\frac{3}{100}$	$8 + \frac{2}{100}$	8 ones and 2 hundredths

7 Write the decimals as fractions.
Give your answer as a mixed number.

a) 32.6 = 32 $\frac{6}{10}$

b) 2.03 = 2 $\frac{3}{100}$

c) 13.08 = 13 $\frac{8}{100}$

d) 3.98 = 3 $\frac{98}{100}$

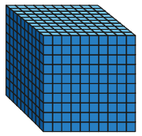
8 Use the digits 3, 4 and 5 to complete the decimal number.

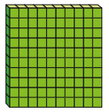
e.g. 3 4 . 0 5

How many different numbers can you make?

Understand thousandths

1 Tommy is using base 10 to represent decimals.

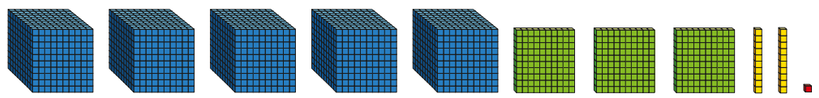
He uses  to represent 1 whole.

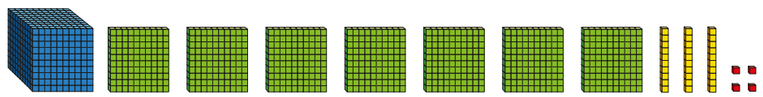
He uses  to represent $\frac{1}{10}$ or 0.1

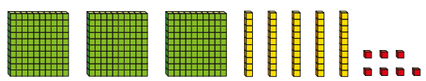
He uses to represent $\frac{1}{100}$ or 0.01

He uses to represent $\frac{1}{1000}$ or 0.001

What decimals are represented?

a) 

b) 

c) 

2 **a)** Represent each number using base 10

0.512 1.352 2.003

b) Use your representations to help you complete the statements.

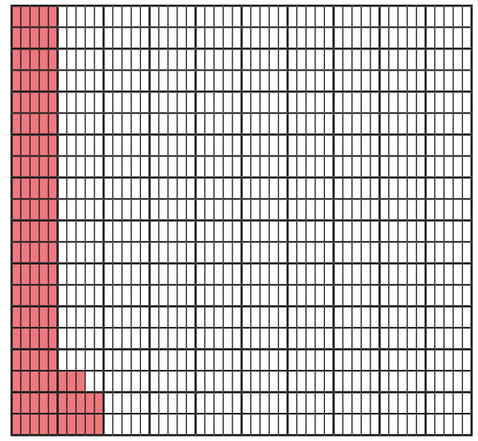
0.512 = 0.5 + 0.01 + ☐

1.352 = 1 + ☐ + ☐ + ☐

2.003 = _____

3 Here is a thousand square.

Part of the square has been coloured.



a) Why do you think it is called a thousand square?

_____

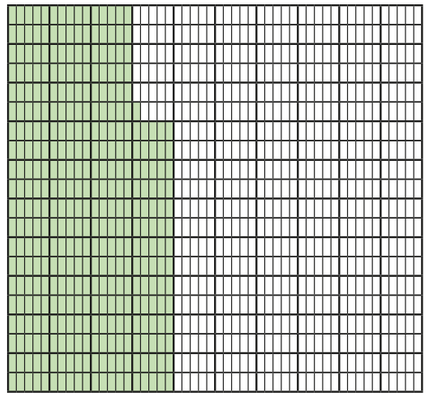
b) What fraction of the square has been coloured? $\frac{\square}{1000}$

c) Write the fraction as a decimal. ☐

4 What fraction of each square has been shaded?

Write each number as a fraction and as a decimal.

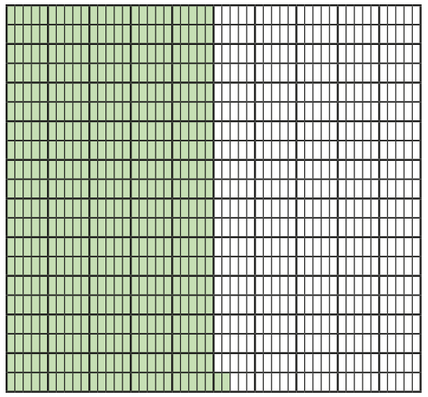
a)



fraction = ☐

decimal = ☐

b)

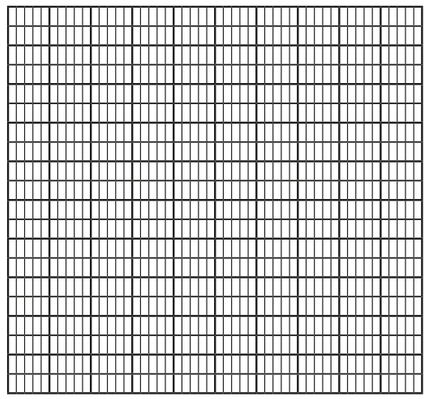


fraction = ☐

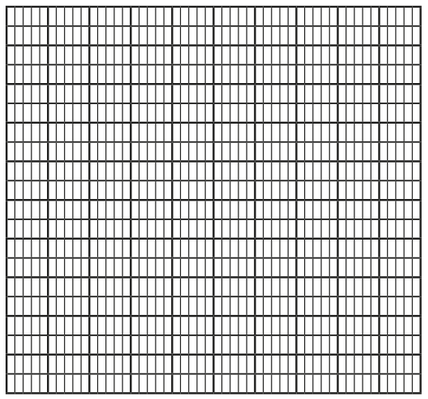
decimal = ☐

5 Colour the grids to represent the fraction and decimal.

a) $\frac{73}{1000}$



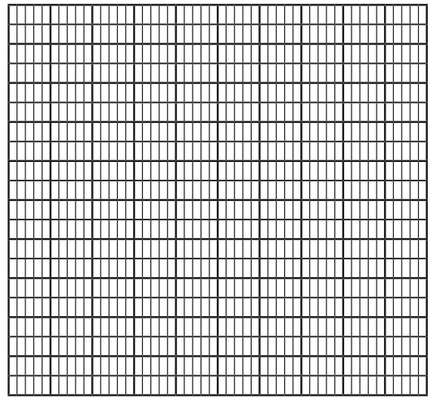
b) 0.302



6 Represent these numbers on a place value chart.

a) 1.372 **b)** 0.091 **c)** 3.542

7 Show that $\frac{400}{1000}$ is the same as 0.4



8 Write the numbers represented by the place value charts.

a)

Ones	Tenths	Hundredths	Thousandths
1 1 1 1	0.1 0.1	0.01 0.01 0.01 0.01 0.01 0.01 0.01	0.001 0.001 0.001 0.001 0.001 0.001

☐

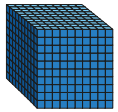
b)

Ones	Tenths	Hundredths	Thousandths
	0.1 0.1 0.1 0.1 0.1		0.001 0.001 0.001 0.001

☐

Understand thousandths

1 Tommy is using base 10 to represent decimals.

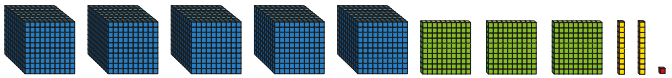
He uses  to represent 1 whole.

He uses  to represent $\frac{1}{10}$ or 0.1

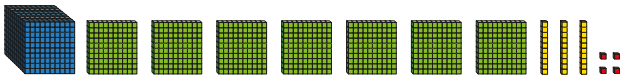
He uses to represent $\frac{1}{100}$ or 0.01

He uses to represent $\frac{1}{1000}$ or 0.0**01**

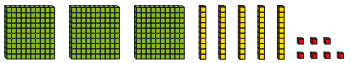
What decimals are represented?

a) 

5·321

b) 

1·734

c) 

0·357

2 **a)** Represent each number using base 10

0.512 1.352 2.003

b) Use your representations to help you complete the statements.

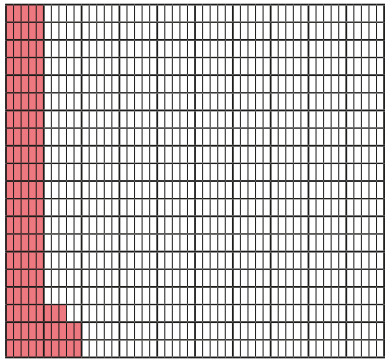
0.512 = 0.5 + 0.01 + [0·002]

1.352 = 1 + [0·3] + [0·05] + [0·002]

2.003 = 2 + 0·003

3 Here is a thousand square.

Part of the square has been coloured.



a) Why do you think it is called a thousand square?

It's split into a thousand parts.

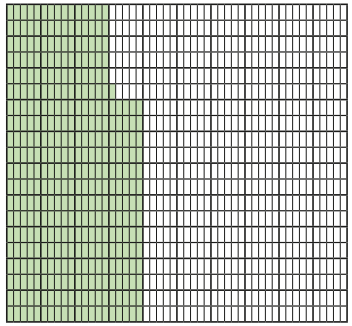
b) What fraction of the square has been coloured? $\frac{113}{1000}$

c) Write the fraction as a decimal. [0·113]

4 What fraction of each square has been shaded?

Write each number as a fraction and as a decimal.

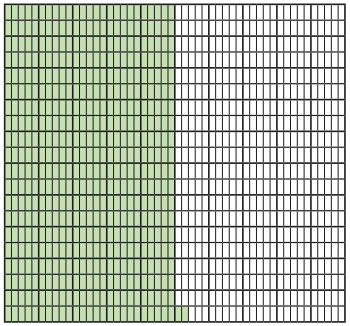
a)



fraction = $\frac{371}{1000}$

decimal = 0·371

b)

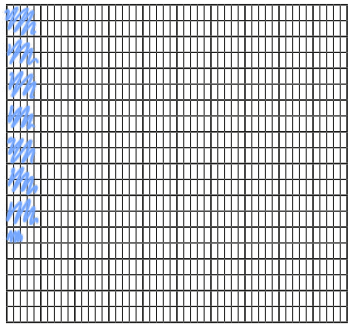


fraction = $\frac{502}{1000}$

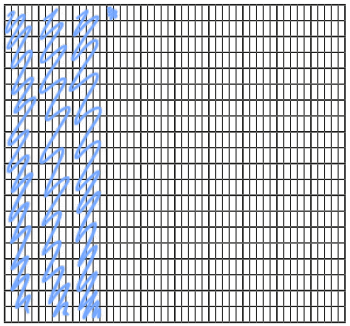
decimal = 0·502

5 Colour the grids to represent the fraction and decimal.

a) $\frac{73}{1000}$



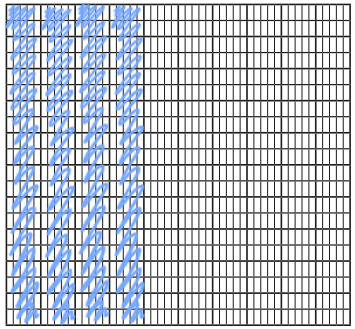
b) 0.302



6 Represent these numbers on a place value chart.

a) 1.372 **b)** 0.091 **c)** 3.542

7 Show that $\frac{400}{1000}$ is the same as 0.4



8 Write the numbers represented by the place value charts.

a)

Ones	Tenths	Hundredths	Thousandths
1 1 1 1	0.1 0.1	0.01 0.01 0.01 0.01 0.01 0.01 0.01	0.001 0.001 0.001 0.001 0.001 0.001

4·276

b)

Ones	Tenths	Hundredths	Thousandths
	0.1 0.1 0.1 0.1 0.1		0.001 0.001 0.001 0.001

0·504

Thousandths as decimals

1 Represent the numbers on a place value chart.

Write the decimal.

a) 5 ones, 7 tenths, 0 hundredths and 2 thousandths

b) 0 ones, 6 tenths, 2 hundredths and 9 thousandths

c) 7 ones, 0 tenths, 1 hundredth and 3 thousandths

d) 5 ones, 6 tenths, 7 hundredths and 0 thousandths

e) What would these numbers be as fractions?

Talk about it with a partner.

2 Write the mixed numbers as decimals.

a) $4\frac{514}{1000} =$ ☐

b) $6\frac{325}{1000} =$ ☐

c) $2\frac{250}{1000} =$ ☐

d) $1\frac{50}{1000} =$ ☐

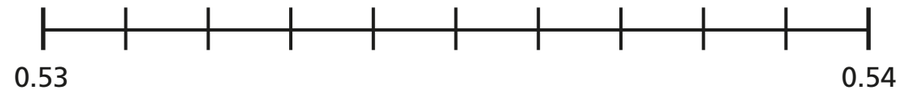
e) $4\frac{5}{1000} =$ ☐

f) $\frac{2}{1000} =$ ☐

3 Mo is placing decimal numbers on a number line.

Draw an arrow from each number to its position on the number line.

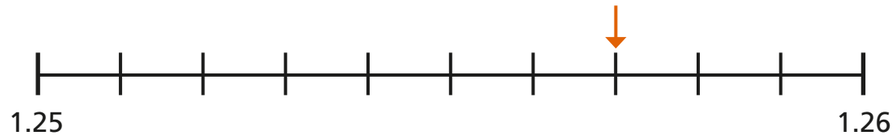
0.532	0.535	0.538	$\frac{539}{1000}$



4 What number is the arrow pointing to?

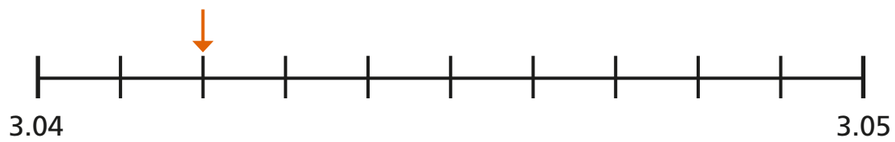
Write each number as a decimal and as a fraction.

a)



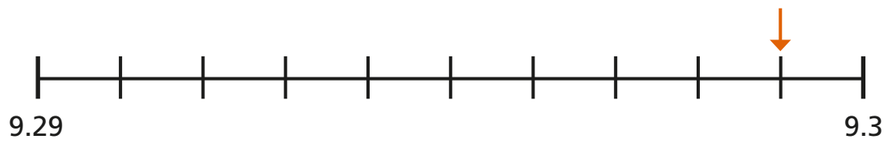
decimal = ☐ fraction = ☐/1000

b)



decimal = ☐ fraction = ☐/1000

c)



decimal = ☐ fraction = ☐/1000

5 Complete the table to continue the pattern.

$\frac{57}{1000}$	$\frac{58}{1000}$	$\frac{\square}{1000}$	$\frac{\square}{1000}$				
0.057							

6 Write a decimal to complete the statement.

a) $\frac{7}{10} + \frac{3}{100} + \frac{9}{1000} = \square$

b) $\frac{9}{10} + \frac{7}{100} + \frac{1}{1000} = \square$

c) $\frac{7}{100} + \frac{9}{10} + \frac{1}{1000} = \square$

d) $\frac{2}{10} + \frac{7}{1000} = \square$

e) $\frac{6}{100} + \frac{3}{1000} = \square$

7 Eva has 12 plain counters.

She makes numbers using the place value chart.

1	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$

a) List five numbers that Eva could make.

b) What is the greatest and smallest number she can make with all 12 counters?

greatest ☐ smallest ☐

8 Whitney is representing 0.536

$$\frac{50}{100} + \frac{18}{1000} + \frac{18}{1000}$$

a) Is Whitney correct? _____

Explain your answer.

b) Partition Whitney's number another way.

Thousandths as decimals

1 Represent the numbers on a place value chart.

Write the decimal.

a) 5 ones, 7 tenths, 0 hundredths and 2 thousandths

5·702

b) 0 ones, 6 tenths, 2 hundredths and 9 thousandths

0·629

c) 7 ones, 0 tenths, 1 hundredth and 3 thousandths

7·013

d) 5 ones, 6 tenths, 7 hundredths and 0 thousandths

5·67

e) What would these numbers be as fractions?

Talk about it with a partner.

2 Write the mixed numbers as decimals.

a) $4\frac{514}{1000}$ = 4·514

b) $6\frac{325}{1000}$ = 6·325

c) $2\frac{250}{1000}$ = 2·25

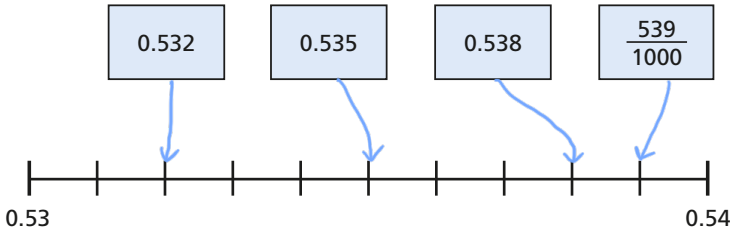
d) $1\frac{50}{1000}$ = 1·05

e) $4\frac{5}{1000}$ = 4·005

f) $\frac{2}{1000}$ = 0·002

3 Mo is placing decimal numbers on a number line.

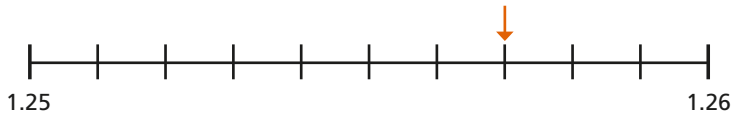
Draw an arrow from each number to its position on the number line.



4 What number is the arrow pointing to?

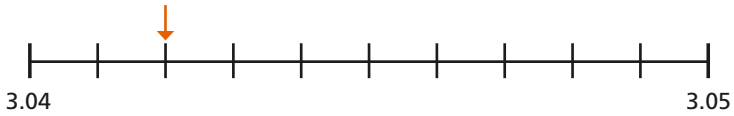
Write each number as a decimal and as a fraction.

a)



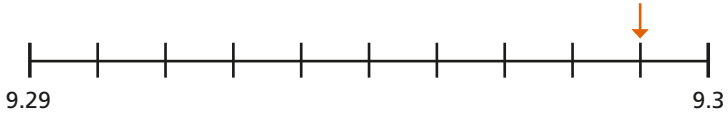
decimal = 1·257 fraction = $\frac{1257}{1000}$

b)



decimal = 3·042 fraction = $\frac{3042}{1000}$

c)



decimal = 9·299 fraction = $\frac{9299}{1000}$

5 Complete the table to continue the pattern.

$\frac{57}{1000}$	$\frac{58}{1000}$	$\frac{59}{1000}$	$\frac{60}{1000}$	$\frac{61}{1000}$	$\frac{62}{1000}$	$\frac{63}{1000}$	$\frac{64}{1000}$
0.057	0.058	0.059	0.06	0.061	0.062	0.063	0.064

6 Write a decimal to complete the statement.

a) $\frac{7}{10} + \frac{3}{100} + \frac{9}{1000} =$ 0.739

b) $\frac{9}{10} + \frac{7}{100} + \frac{1}{1000} =$ 0.971

c) $\frac{7}{100} + \frac{9}{10} + \frac{1}{1000} =$ 0.971

d) $\frac{2}{10} + \frac{7}{1000} =$ 0.207

e) $\frac{6}{100} + \frac{3}{1000} =$ 0.063

7 Eva has 12 plain counters.

She makes numbers using the place value chart.

1	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$

a) List five numbers that Eva could make.

e.g. 5.304 6.024 10.011 3.441 1.551

b) What is the greatest and smallest number she can make with all 12 counters?

greatest 12 smallest 0.012

8 Whitney is representing 0.536

$$\frac{50}{100} + \frac{18}{1000} + \frac{18}{1000}$$

a) Is Whitney correct? Yes

Explain your answer.

b) Partition Whitney's number another way.

e.g. $0.536 = \frac{1}{2} + \frac{3}{100} + \frac{6}{1000}$