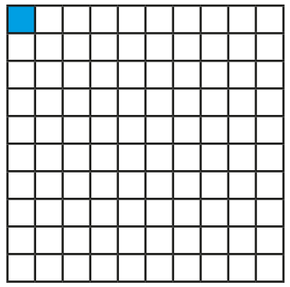
Equivalent FDP

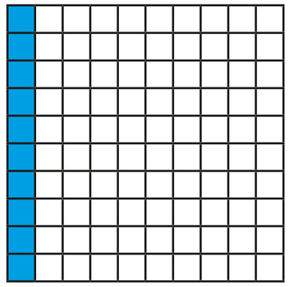
1 What fraction, decimal and percentage of each grid is shaded blue?



fraction = $\frac{1}{100}$

decimal = 0·01

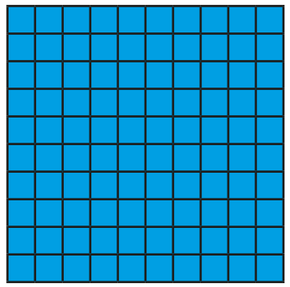
percentage = 1 %



fraction = $\frac{1}{10}$

decimal = 0·1

percentage = 10 %

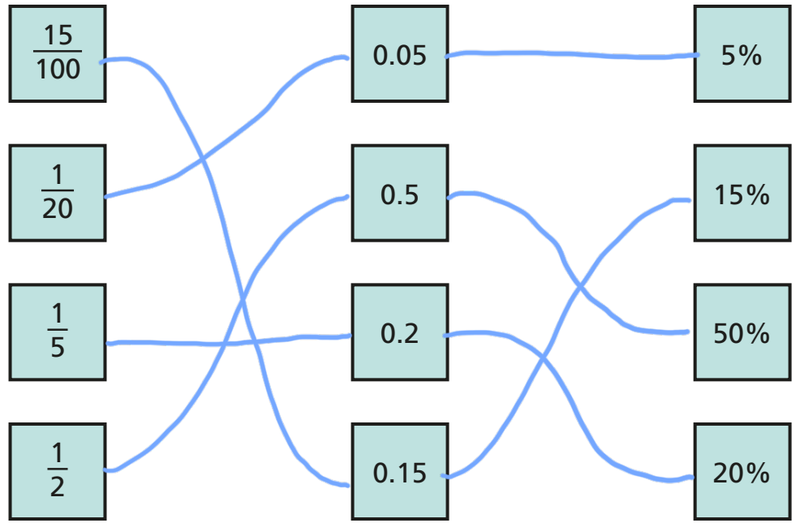


fraction = $\frac{100}{100}$

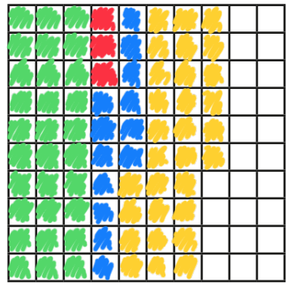
decimal = 1

percentage = 100 %

2 Match the equivalent fractions, decimals and percentages.



3 **a)** Shade the grid in the given proportions.



- $\frac{3}{10}$ green
- 0.03 red
- 13% blue
- 0.3 yellow

b) What proportion of the grid is unshaded?

Write your answer as a fraction, decimal and percentage.

fraction = $\frac{6}{25}$ decimal = 0·24 percentage = 24 %

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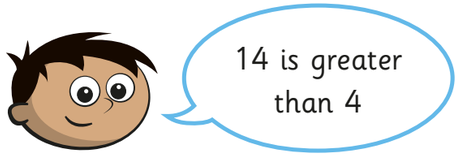
4 Complete the table.

Fraction	Decimal	Percentage
$\frac{21}{100}$	0.21	21 %
$\frac{3}{25}$	0·12	12%
$\frac{2}{10}$	0·2	20 %
$\frac{2}{5}$	0.4	40 %.
$\frac{11}{25}$	0.44	44 %.
$\frac{1}{25}$	0·04	4%
$\frac{3}{4}$	0·75	75 %
$\frac{99}{100}$	0.99	99 %

5 Amir was asked to complete the statement using <, > or =.

14% (>) 0.4

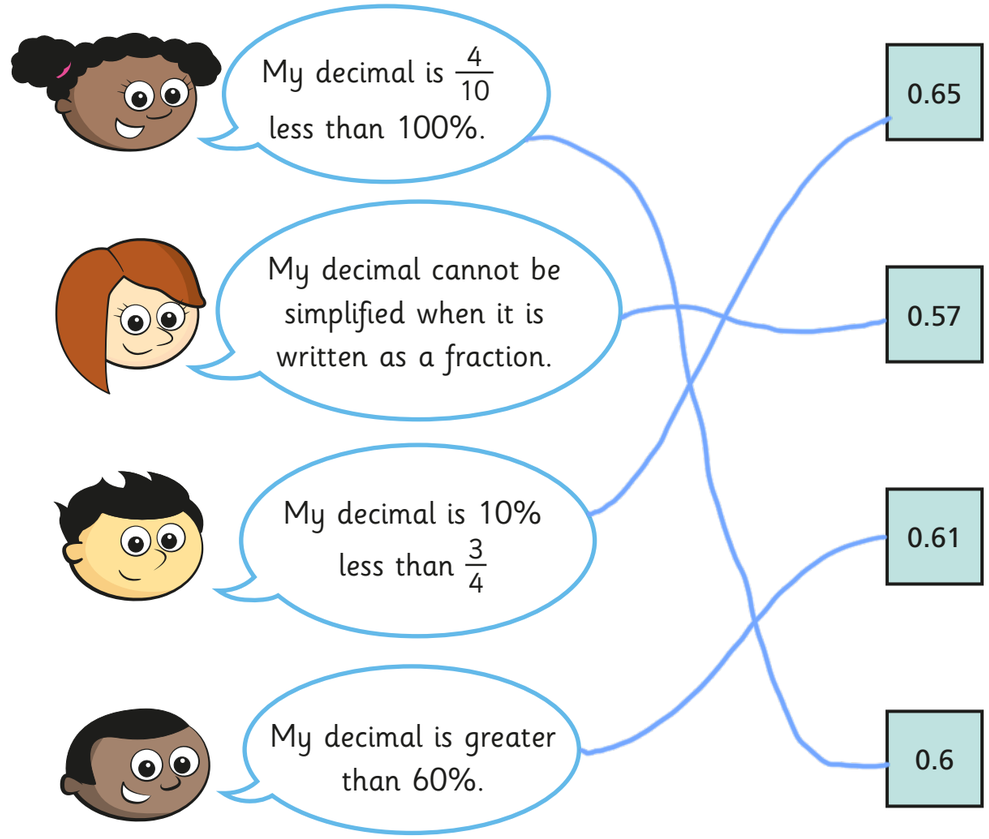


What mistake has Amir made?

He hasn't compared them in the same form. 0·4 = 40 %

and 40% > 14 % so 14 % < 0·4

6 Match the decimal cards to the people.



7 Use the digit cards to write a decimal greater than $\frac{1}{5}$ but less than 40%.

You may not use a card more than once in each number.

0	1	2	3	4	5

E.g. 0 . 2 4

How many other answers can you find?

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Fractions to decimals (2)

1 Fractions can be expressed as divisions.

For example, $\frac{1}{2} = 1 \div 2$

Write the fractions as divisions.

a) $\frac{1}{3} = \boxed{1} \div \boxed{3}$

b) $\frac{2}{3} = \boxed{2} \div \boxed{3}$

c) $\frac{4}{7} = \boxed{4} \div \boxed{7}$

d) $\frac{\boxed{3}}{\boxed{5}} = 3 \div 5$

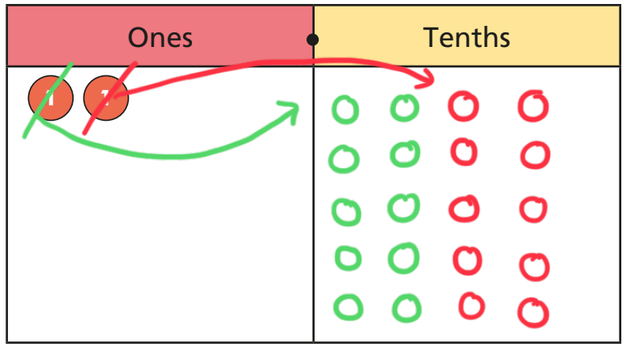
e) $\frac{\boxed{3}}{7} = 3 \div \boxed{7}$

f) $\frac{1}{10} = \boxed{1} \div \boxed{10}$

2 Use place value counters to find the decimal equivalent of $\frac{2}{5}$

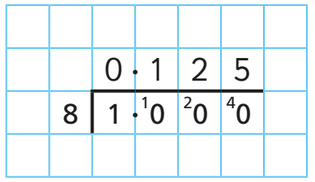
You can draw on the place value chart to help you with exchanging.

$\frac{2}{5} = 2 \div 5 = \boxed{0.4}$



3 Fractions can be converted to decimals by using the short division method.

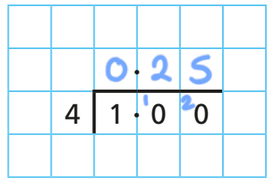
For example, $\frac{1}{8} = 1 \div 8$



$\frac{1}{8} = 0.125$

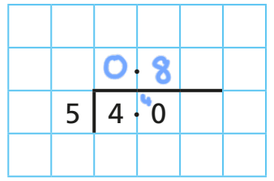
Use the short division method to find the decimal equivalent of the fractions.

a)



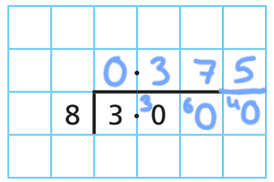
$\frac{1}{4} = \boxed{0.25}$

b)



$\frac{4}{5} = \boxed{0.8}$

c)



$\frac{3}{8} = \boxed{0.375}$

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4 Find the decimal equivalents for these fractions.

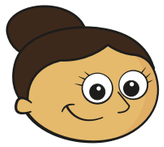
a) $\frac{7}{8}$ = 0·875

c) $\frac{1}{16}$ = 0·0625

b) $\frac{7}{5}$ = 1·4

d) $\frac{9}{16}$ = 0·5625

5



To find $\frac{19}{20}$ as a decimal, I found $\frac{1}{20}$ as a decimal, then took it away from 1

Here is Dora's working out.

			0 · 0	5		
	2	0	1 · ^{1}0	^{10}0		

1 – 0.05 = 0.95

$\frac{19}{20}$ = 0.95

Use Dora's method to find the decimal equivalent for $\frac{49}{50}$

			0·0	2		
	5	0	1·^{1}0	^{10}0		

1 – 0·02 = 0·98

0·98

6

I converted $\frac{1}{2}$ to a decimal and got the answer 2

Jack is incorrect.

Explain the mistake that Jack has made.

He did 2 ÷ 1 when he should have done 1 ÷ 2

7 Filip is thinking of a fraction.

When he converts it to a decimal, it is smaller than 0.5 but greater than 0.4

What fraction could Filip be thinking of?

Are there any other possible answers? Talk to a partner.

E.g $\frac{9}{20}$

8 Use the short division method to find the decimal equivalent of $\frac{1}{3}$

0·33333...

Compare answers with a partner.

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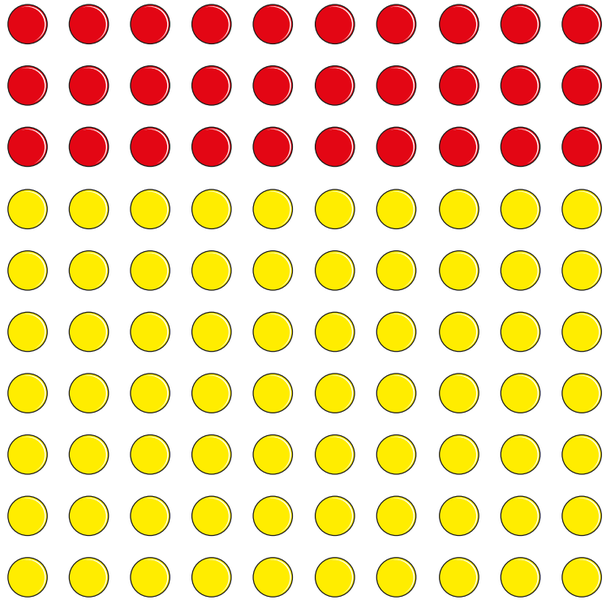
Fractions to percentages

1



a) What fraction of the array of counters is red? $\frac{3}{10}$

b) What fraction of the array of counters is yellow? $\frac{7}{10}$

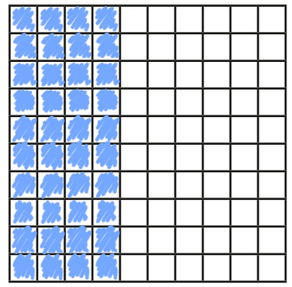
c) What percentage of the array of counters is red? 30 %

d) What percentage of the array of counters is yellow? 70 %

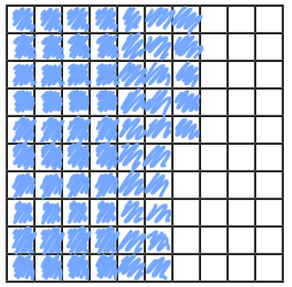
e) What do you notice about the two percentages?

2 **a)** Shade the hundred squares to represent the fractions.

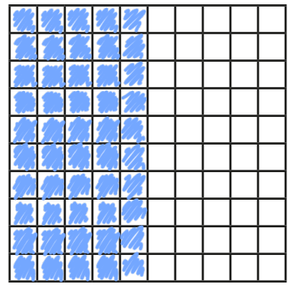
$\frac{40}{100}$



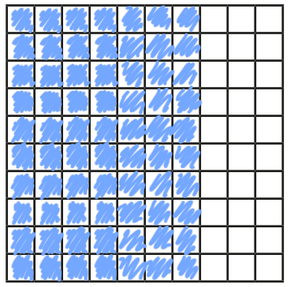
$\frac{65}{100}$



$\frac{1}{2}$



$\frac{7}{10}$



b) Write the fractions as percentages.

$\frac{40}{100}$ = 40 %

$\frac{65}{100}$ = 65 %

$\frac{1}{2}$ = 50 %

$\frac{7}{10}$ = 70 %

c) Compare your shaded grids with a partner's.

What is the same and what is different?

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3 Fill in the missing numbers.

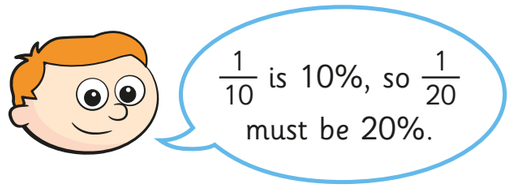
a) $\frac{9}{10} = \frac{\boxed{90}}{100} = \boxed{90}\ \%$

b) $\frac{9}{20} = \frac{\boxed{45}}{100} = \boxed{45}\ \%$

c) $\frac{9}{50} = \frac{\boxed{18}}{100} = \boxed{18}\ \%$

d) $\frac{9}{25} = \frac{\boxed{36}}{100} = \boxed{36}\ \%$

4



Explain the mistake that Ron has made.

What is the correct answer?

$\frac{1}{20} = \boxed{5}\ \%$

5 Convert the fractions to percentages.

a) $\frac{1}{4} = \boxed{25\%}$

$\frac{1}{2} = \boxed{50\%}$

$\frac{3}{4} = \boxed{75\%}$

b) $\frac{1}{5} = \boxed{20\%}$

$\frac{2}{5} = \boxed{40\%}$

$\frac{4}{5} = \boxed{80\%}$

c) $\frac{16}{20} = \boxed{80\%}$

$\frac{8}{20} = \boxed{40\%}$

$\frac{4}{20} = \boxed{20\%}$

d) $\frac{45}{50} = \boxed{90\%}$

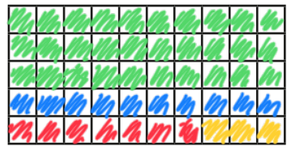
$\frac{9}{10} = \boxed{90\%}$

$\frac{18}{20} = \boxed{90\%}$

e) What do you notice?

6 **a)** Shade the grid in the given proportions.

- $\frac{3}{5}$ green
- 14% red
- $\frac{4}{20}$ blue
- the rest yellow



b) What percentage of the grid is yellow?

$\boxed{6}\ \%$

7 **a)** Use each digit card once to make the statements correct.

1	2	3	4	5

$\frac{\boxed{1}}{\boxed{2}} > \boxed{4}0\%$ $\qquad 75\% = \frac{\boxed{3}}{4}$ $\qquad \frac{3}{\boxed{5}} < 65\%$

b) Are there any other solutions?

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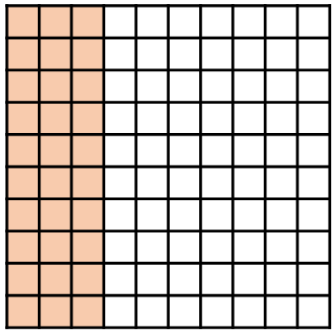
Year 6

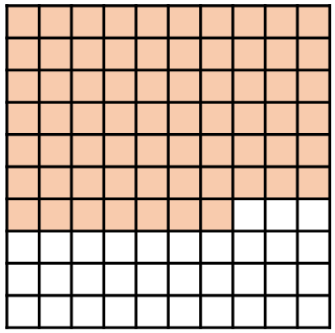
Percentages

Name _____

1 Here are some hundred grids.
What percentage of each grid is shaded?



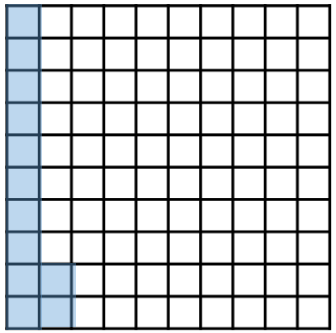
30 %



67 %

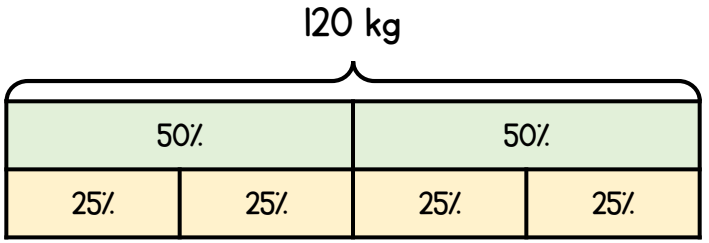
2 marks

2 Shade 12% of the hundred grid.



1 mark

3 Use the bar model to help you.



What is 50% of 120 kg?

60 kg

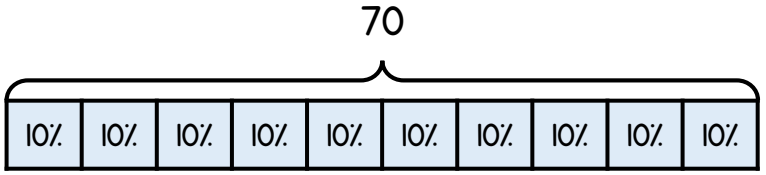
1 mark

What is 25% of 120 kg?

30 kg

1 mark

4 Use the bar model to help you.



What is 10% of 70?

7

What is 30% of 70?

21

What is 90% of 70?

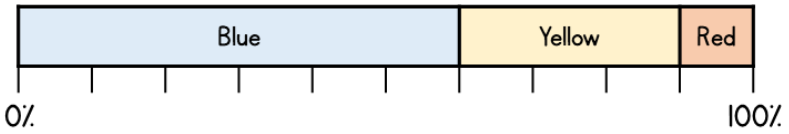
63

What is 5% of 70?

3.5

4 marks

5 The percentage bar chart shows the colour of counters in a box.



What percentage of the counters in the box are blue?

60%

What percentage of the counters in the box are yellow?

30%

What percentage of the counters in the box are red?

10%

3 marks

6 50% of a number is 32
What is the number?

64

10% of a number is 7.5
What is the number?

75

2 marks

7 Max has £800 in the bank.
He spends 3% of his money on a new computer game.
How much money does he spend on the computer game?

1 mark for calculating 1% = £8

£ 24

2 marks

8 Complete the table.

Percentage	Fraction	Decimal
50%	$\frac{1}{2}$	0.5
7%	$\frac{7}{100}$	0.07
20%	$\frac{1}{5}$	0.2
57%	$\frac{57}{100}$	0.57

1 mark for 2 correct.

2 marks

9 Leona has a large bag of apples.
There are 180 apples in the bag.
She uses $\frac{1}{4}$ of the apples to make some juice.
She uses 20% of the apples to make some pies.
How many apples are left?

1 mark for correctly finding 20% or $\frac{1}{4}$

99 apples

2 marks

Circle how confident you feel with percentages.

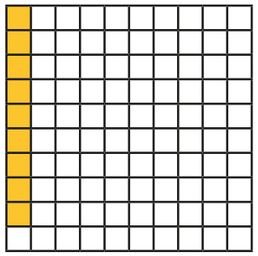
1 2 3 4 5

Not confident — Very confident

Understand percentages

1 Complete the sentence for each diagram.

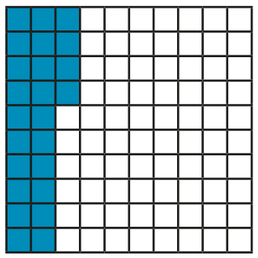
a)



There are ☐ parts out of a hundred shaded.

This is ☐ %.

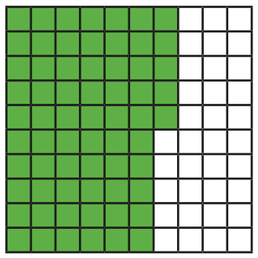
b)



There are ☐ parts out of a hundred shaded.

This is ☐ %.

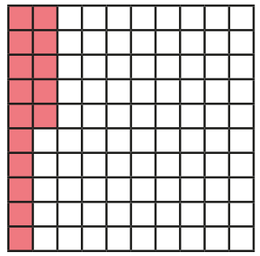
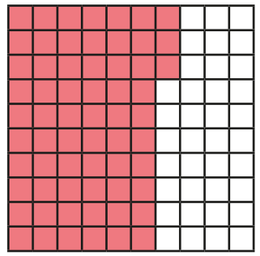
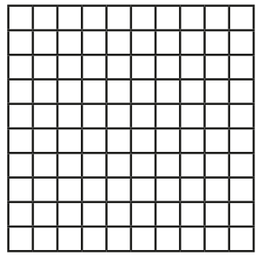
c)



There are ☐ parts out of a hundred shaded.

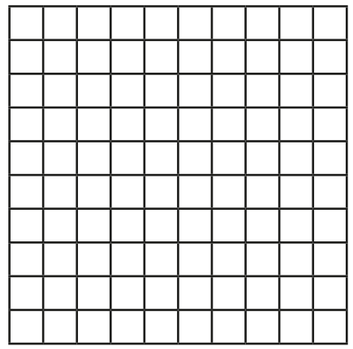
This is ☐ %.

2 Complete the table.

Hundred square	Percentage
	
	
	82%

3 Shade 15% of the hundred square red.

Shade 32% of the hundred square blue.



What percentage of the hundred square is **not** shaded? ☐ %

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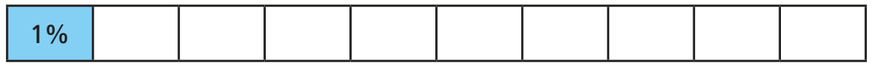
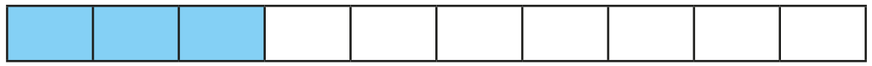
4 **a)** Is 1% of this bar model shaded? No



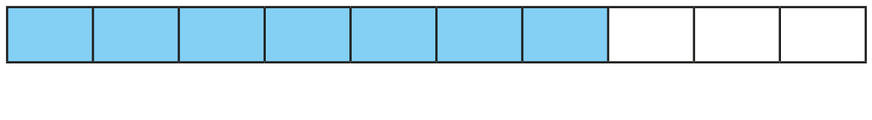
Explain your reasoning.

It's split into 10 parts so each part is 10%

b) What percentage of each bar model is shaded?



30 %



70 %

5 Passengers are boarding a plane.

The plane has 100 seats.

a) 10% of the seats are already full.

How many passengers are already on the plane? 10

b) 15% of the seats have not been booked.

How many seats have been booked? 85

c) How many passengers still need to board the plane? 75

6 Dexter has £1 to spend.

He buys some stickers.

What percentage of his money did Dexter spend?

65 %

7 Aisha and Brett have been selling tickets for the school play.

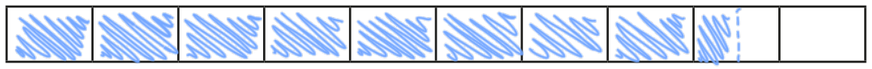
There are 100 seats available.

- On Monday they sold 34% of the tickets.
- On Tuesday they sold 42 tickets.
- By the end of Wednesday, 95% of the tickets had been sold.

How many tickets did they sell on Wednesday?

On Wednesday they sold 19 tickets.

8 Shade 85% of this bar model.



Compare answers with a partner.

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