1 x 12 = 12

2 x 12 = 24

3 x 12 = 36

4 x 12 = 48

5 x 12 = 60

6 x 12 = 72

7 x 12 = 84

8 x 12 = 96

9 x 12 = 108

10 x 12 = 120

11 x 12 = 132

12 x 12 = 144

$12 \div 12 = 1$

$24 \div 12 = 2$

$36 \div 12 = 3$

$48 \div 12 = 4$

$60 \div 12 = 5$

$72 \div 12 = 6$

$84 \div 12 = 7$

$96 \div 12 = 8$

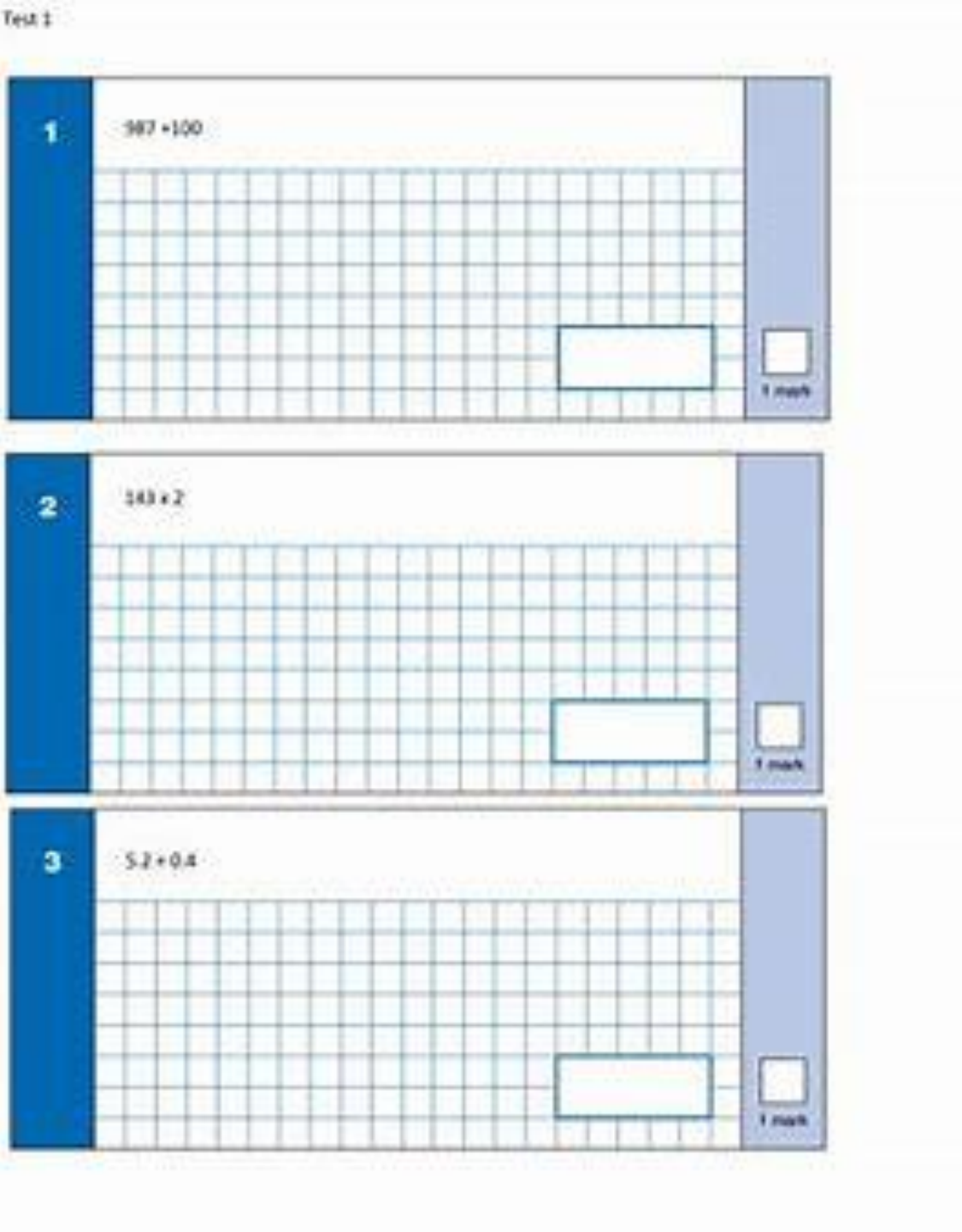
$108 \div 12 = 9$

$120 \div 12 = 10$

$132 \div 12 = 11$

$144 \div 12 = 12$

# Arithmetic Test



15.01.2021

L.O: To convert fractions into percentages.

Success Criteria;

- Use your knowledge of place value
- Understand 'per cent' means 'out of 100'
- Use your knowledge of equivalent decimal fractions

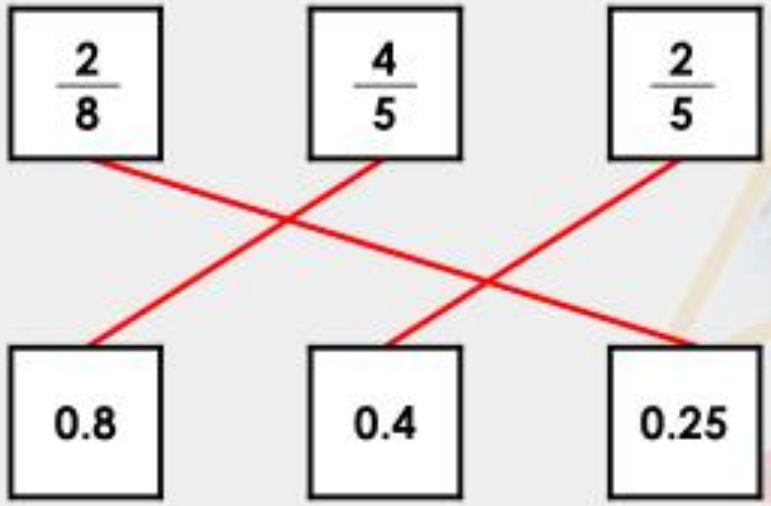
## Introduction

**Match the decimals to the fractions.**

| | | |
|---|---|---|
| $\frac{2}{8}$ | $\frac{4}{5}$ | $\frac{2}{5}$ |
| 0.8 | 0.4 | 0.25 |

Introduction

Match the decimals to the fractions.



# Fractions to percentages

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

# Percentages

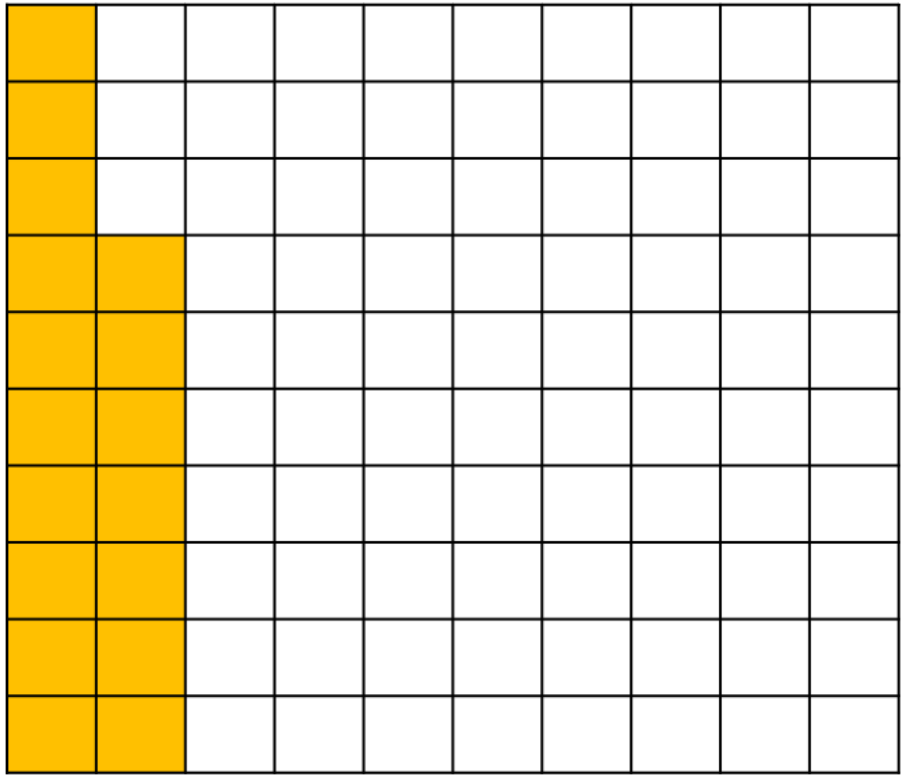
The sign % stands for **'per cent'** which means 'out of 100'.

40% means 40 out of 100

11% means 11 out of 100

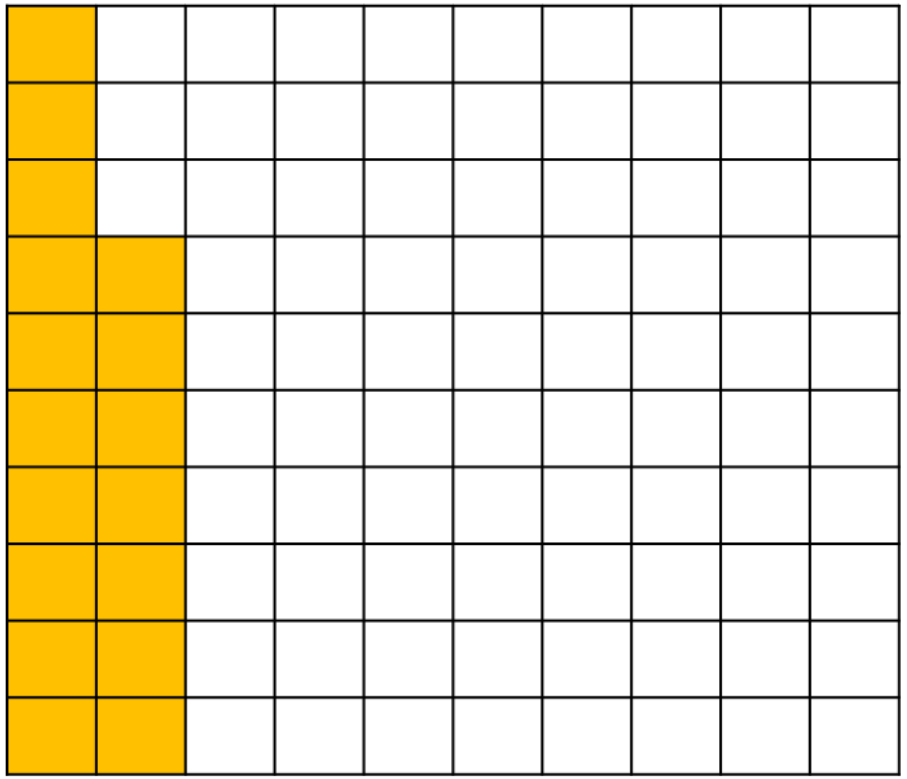
***Click the video link below to watch the short video explaining 'per cent'.***

https://www.bbc.co.uk/bitesize/topics/znjqtfr/articles/z8ws3k7



What percentage of the grid is shaded?

‘out of’ ‘one hundred’



= seventeen hundredths

$= \frac{17}{100}$

What percentage of the grid is shaded?

'out of' 'one hundred'

$\frac{17}{100} = 17\ \%$

# Fractions to percentages

**Per cent** means out of a hundred. When we talk about percentages, we are referring to a fraction that is over one hundred. Instead of writing it as a fraction, we use the per cent symbol (%).

$59\% = \frac{59}{100}$

1) Convert the fractions to percentages.

$\frac{35}{100}$ $\frac{62}{100}$

$\frac{99}{100}$ $\frac{7}{100}$

2) Convert the percentages to fractions.

41 % 3 %

37 % 10 %

# Fractions to percentages

**Per cent** means out of a hundred. When we talk about percentages, we are referring to a fraction that is over one hundred. Instead of writing it as a fraction, we use the per cent symbol (%).

$59\% = \frac{59}{100}$

1) Convert the fractions to percentages.

$\frac{35}{100}$ 35 %

$\frac{62}{100}$ 62 %

$\frac{99}{100}$ 99 %

$\frac{7}{100}$ 7 %

2) Convert the percentages to fractions.

41 % $\frac{41}{100}$

3 % $\frac{3}{100}$

37 % $\frac{37}{100}$

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

## Method 1

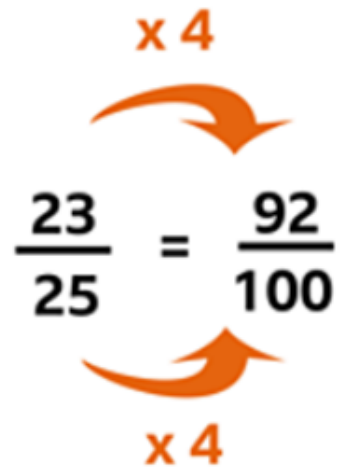
Since not all fractions have a denominator of 100, you have to convert the fraction into one that does.

### Example 1:

What is $^{23}/_{25}$ as a percentage?

- **Step 1:** Convert $^{23}/_{25}$ into an **equivalent fraction** with a denominator of 100. Remember, multiply the numerator and the denominator by the same number.
- **Step 2:** Now that you have the equivalent fraction of $^{92}/_{100}$, you take the numerator and add the per cent sign!

$^{92}/_{100}$ = **92%**

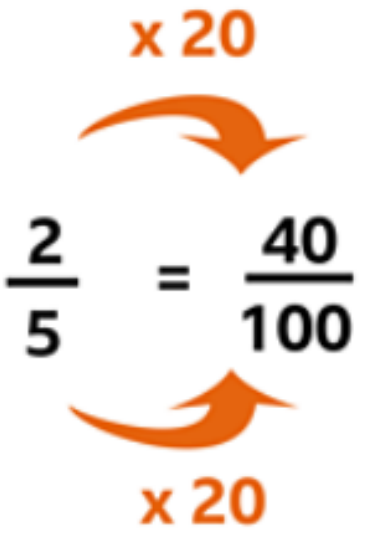


## Example 2:

What is $\frac{2}{5}$ as a percentage?

- **Step 1:** Convert $\frac{2}{5}$ into an equivalent fraction with a denominator of 100.
- **Step 2:** Place the numerator 40 next to the per cent symbol.

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



$\frac{3}{5} \overset{\times 20}{=} \frac{60}{100} = 60\ \%$

Have a think

$\frac{\square}{100} = 77\ \%$

$\frac{1}{\square} = \frac{\square}{\square} = 5\ \%$

$\frac{1}{5} = \frac{\square}{100} = \square$

$\frac{17}{20} = \frac{\square}{100} = \square$

$\frac{\square}{4} = \frac{75}{100} = \square$

$$\frac{3}{5} \overset{\times 20}{=} \frac{60}{100} = 60\,\%$$

$$\frac{77}{100} = 77\,\%$$

$$\frac{1}{20} = \frac{5}{100} = 5\,\%$$

$$\frac{1}{5} = \frac{20}{100} = 20\,\%$$

$$\frac{17}{20} = \frac{85}{100} = 85\,\%$$

$$\frac{3}{4} = \frac{75}{100} = 75\,\%$$

## Method 2

What if you can't convert the fraction into an equivalent with a denominator of 100? Not all numbers go into 100 after all.

Sometimes, you have to convert the fraction into a decimal first before finding the percentage.

### Example 1:

What is $\frac{3}{8}$ as a percentage?

- **Step 1:** Did you know that the fraction line also means divide? So $\frac{3}{8}$ can also be written as 3 ÷ 8.

So **3 ÷ 8 = 0.375**


Top tip: You can always use the bus stop method to help you with division.

- **Step 2:** Now that the fraction is a decimal, you multiply it by 100.

**0.375 x 100 = 37.5**

- **Step 3:** Add the per cent sign next to 37.5.

So $\frac{3}{8}$ = **37.5 %**

## Example 2:

What is $\frac{4}{6}$ as a percentage?

- **Step 1:** Divide the numerator by the denominator.

So **4 ÷ 6 = 0.67** (rounded to two decimal places)

- **Step 2:** Multiply by 100.

**0.67 x 100 = 67**

- **Step 3:** Add the per cent symbol.

So $\frac{4}{6}$ **= 67 %**

## Reasoning 1

George says,

$\frac{8}{20}$ as a percentage is 40%.

Is he correct? Convince me.

Reasoning 1

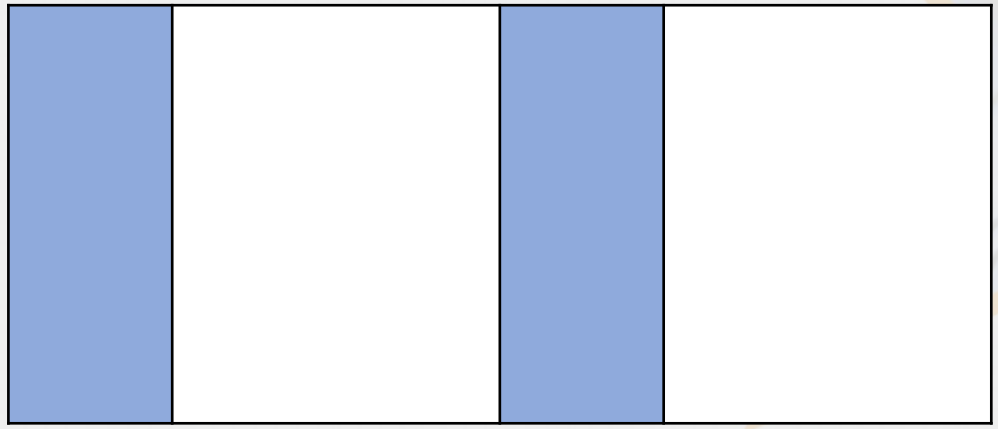
George says,


Is he correct? Convince me.

George is correct because if you multiply 8 and 20 by 5 then it equals $\frac{40}{100}$ which is 40%, as percent is out of 100.

## Problem Solving 1

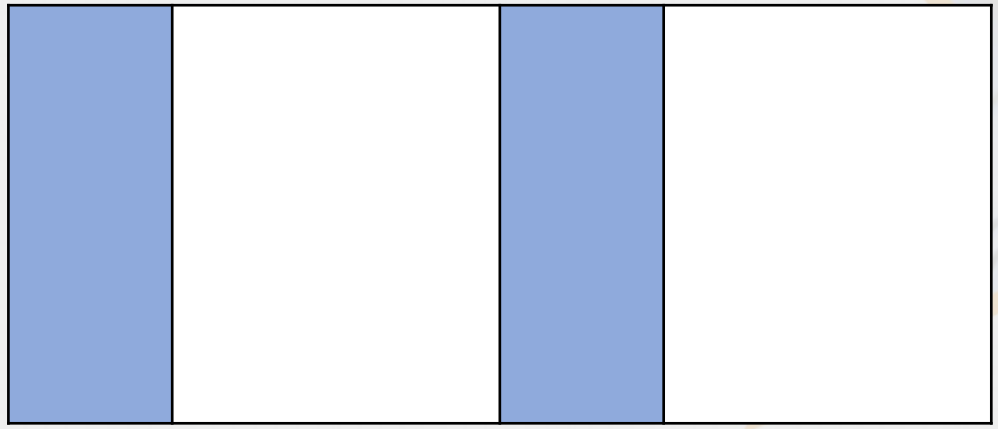
In this diagram each shaded part is $\frac{1}{5}$ of the area of the rectangle.



What percentage is the total white area?

## Problem Solving 1

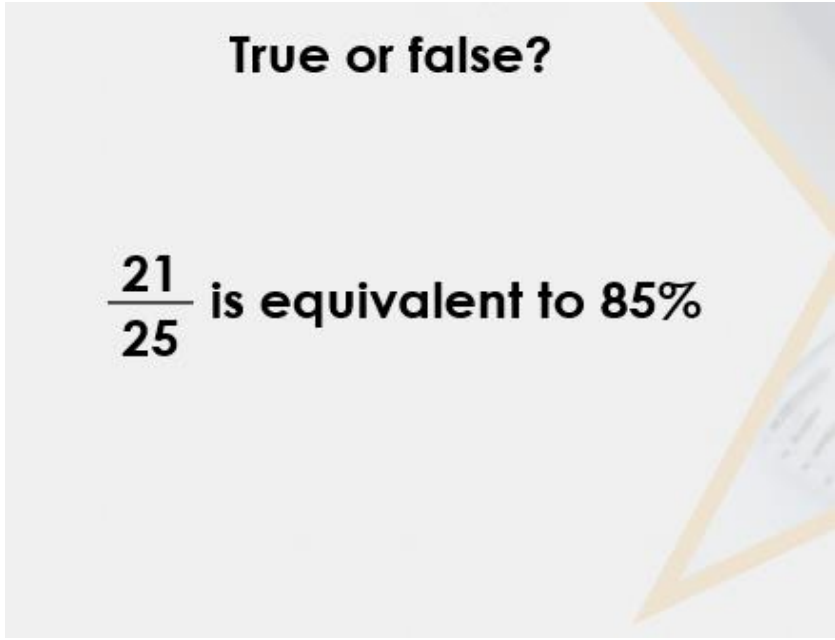
In this diagram each shaded part is $\frac{1}{5}$ of the area of the rectangle.



What percentage is the total white area?

$\frac{3}{5}$ = 60%

# Main Activity




**Complete the worksheet- converting fractions to percentages.**
**Complete the RPS worksheet you are normally given in class- red, blue or yellow.**

# Plenary

Problem Solving 2

Darren has converted a fraction into a percentage.
He says,

My denominator is 10 or 20. My numerator is even. My percentage is >65%.

What could his fraction and percentage combinations be? Find two examples for each denominator.

# Plenary

Problem Solving 2

Darren has converted a fraction into a percentage.
He says,

My denominator is 10 or 20. My numerator is even. My percentage is >65%.

What could his fraction and percentage combinations be? Find two examples for each denominator.

Various answers, for example:

$\frac{14}{20}$ and 70%, $\frac{16}{20}$ and 80%; $\frac{8}{10}$ and 80%, $\frac{9}{10}$ and 90%