

a. Rational and irrational numbers

Number	Write each number in three different fraction formats.	Describe the ratio between the denominators of each fraction. Describe the ratio between the numerators of each fraction.
1,4	$= \frac{14}{10} = \frac{28}{20} = \text{---} = \text{---} = \text{---}$	
100	$= \frac{100}{1} = \frac{1000}{100} = \text{---} = \text{---} = \text{---}$	
1,7878787878	$= \frac{177}{99} = \frac{354}{198} = \text{---} = \text{---} = \text{---}$	
0,020202020	$= \frac{2}{99} = \frac{4}{198} = \text{---} = \text{---} = \text{---}$	

What did you observe in terms of the **ratio** between each set of fractions?

Number	Can you write the numbers in the format of 3 different fractions showing a ratio? The fraction of the numbers can only be repeated, e.g. $\frac{3,141}{1} = \frac{3,141}{1} = \frac{3,141}{1}$	
3,1415926535897.... Do you recognise the number?	$\frac{3,141}{1} = \text{---} = \text{---}$	
1,618033989....	$\frac{1,618}{1} = \text{---} = \text{---}$	
$\sqrt{2}$ = 1,41421356237..	$\frac{\sqrt{2}}{1} = \frac{\sqrt{\quad}}{1} = \frac{\sqrt{\quad}}{1}$	

What did you observe in terms of the **ratio** between each set of fractions?

Pen down the rule you discovered

Write down two **rational** numbers and proof that they are **rational** numbers.

Write down two **irrational** numbers and proof that they are **irrational** numbers.

Why are all the **ratio** words printed in bold?

How does this give meaning to the words '**rational**' and **irrational**'?