



WHAT IS A FRACTION?

When an object is divided into a number of **equal parts** then **each part** is called a fraction



Why do we need fractions ?

Consider the following scenario.

Can you finish the whole cake?

If not, how many cakes did you eat?
1 is not the answer, neither is 0.



This suggest that **we need a new kind of number**



A fraction is an ordered pair of whole numbers, the 1st one is usually written on top of the other, such as $\frac{1}{2}$ or $\frac{3}{4}$.

$$\frac{a}{b}$$

← numerator
← denominator

The **denominator** tells us how many congruent pieces the whole is divided into, thus this number cannot be 0.

The **numerator** tells us how many such pieces are being considered.

Examples:

How much of a pizza do we have below?

we first need to know the size of the original pizza.

The blue circle is our whole.

- if we divide the whole into 8 congruent pieces the **denominator** would be **8**.

We can see that we have 7 of these pieces. Therefore the **numerator** is **7**, and we have

pizza. $\frac{7}{8}$ of a





Numerator and denominator of a fraction

$$\frac{4}{5}$$

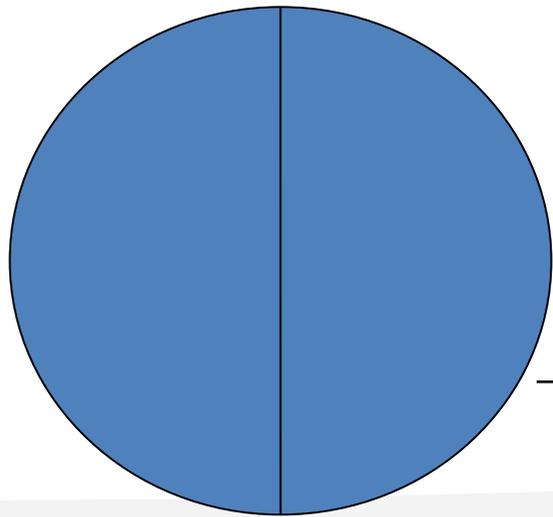
← numerator

← denominator



Denominator

The denominator says **how many equal parts** in the whole object



→ **2 equal parts**

$$\frac{1}{2}$$



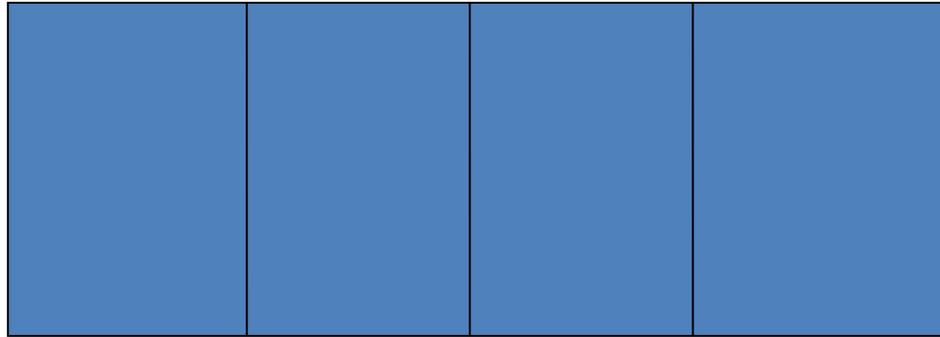


The **denominator** can never be equal to 0

$$\frac{8}{0} = \text{Does not exist!}$$



How many equal parts are there in this shape?

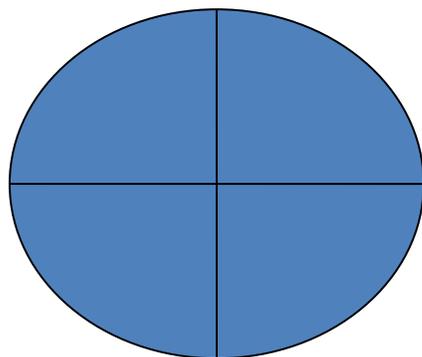


What is **the denominator** of this fraction?

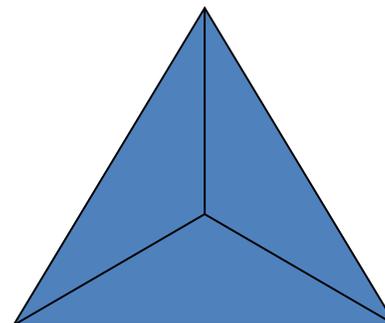
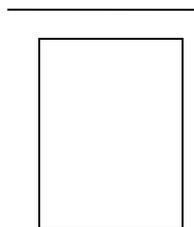
$$\frac{1}{\boxed{}}$$



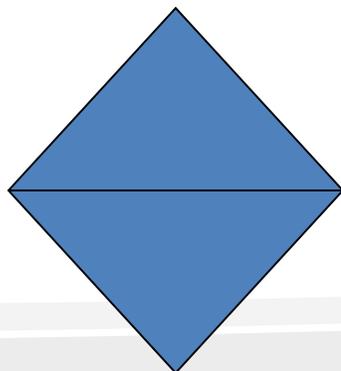
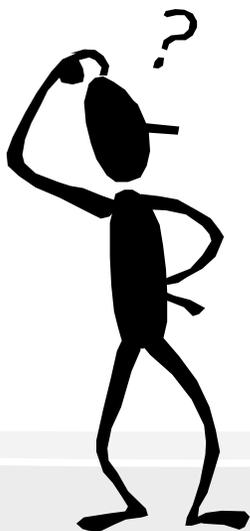
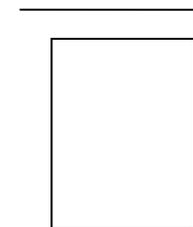
Find the denominators of these fractions



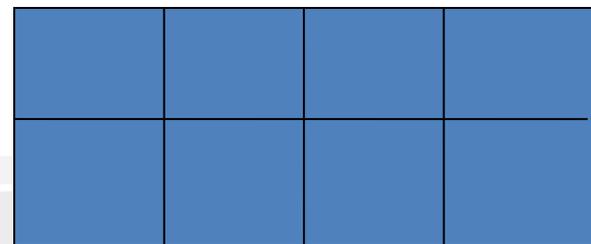
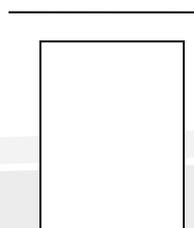
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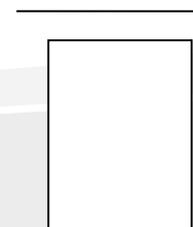
1



1



1





Draw what you think these fractions look like.

$$\frac{1}{4}$$

$$\frac{1}{5}$$

$$\frac{1}{7}$$

$$\frac{1}{12}$$



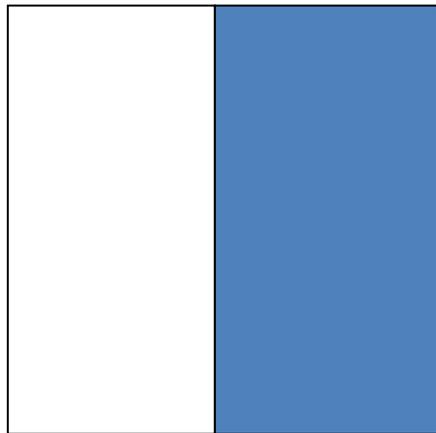
So, the number **on the bottom** of a fraction tells us...

$$? \longrightarrow \frac{1}{4}$$



Numerator of a fraction

The numerator says **how many parts in the fraction**



→ 1 part is
coloured in



$$\frac{1}{2}$$



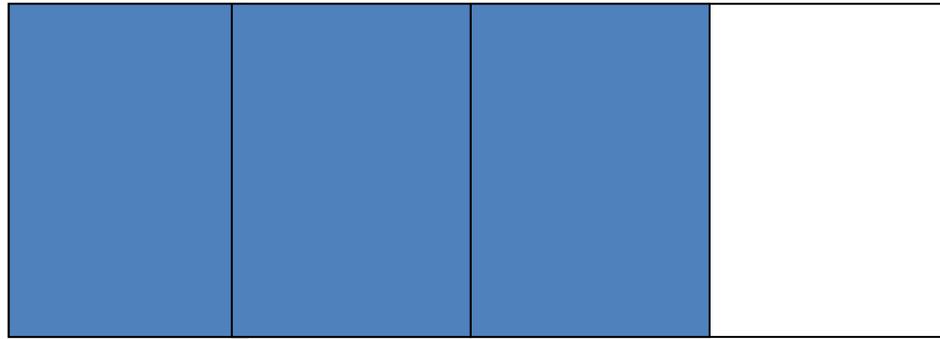


A fraction with a **numerator** of 0
equals 0

$$\frac{0}{8} = 0 \quad \frac{0}{27} = 0$$



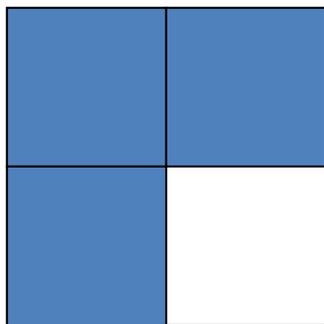
How many equal parts are coloured in in this shape?



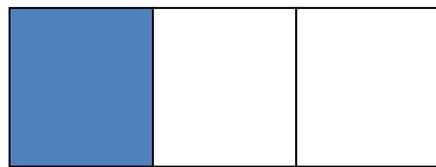
What is the numerator of this fraction?



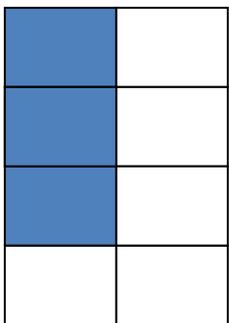
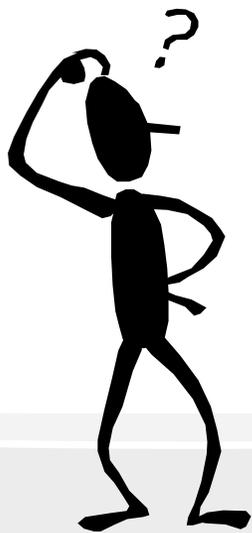
Find the **numerator** for these fractions



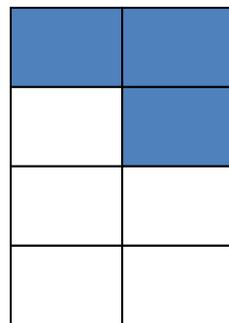
$$\frac{\quad}{4}$$



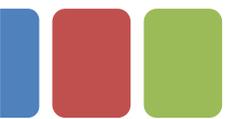
$$\frac{\quad}{3}$$



$$\frac{\quad}{8}$$



$$\frac{\quad}{8}$$



Draw what you think these fractions look like.

$$\frac{3}{7}$$

$$\frac{2}{5}$$

$$\frac{5}{8}$$

$$\frac{7}{12}$$



So, the number **on the top** of a fraction tells us...

$$? \longrightarrow \frac{1}{3}$$



4



The **numerator** tells us...



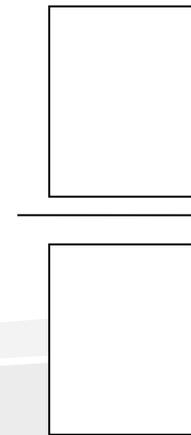
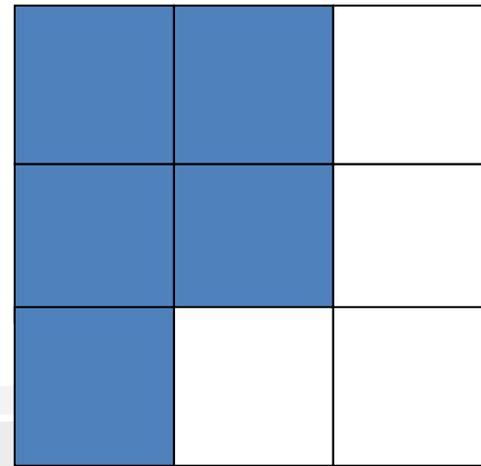
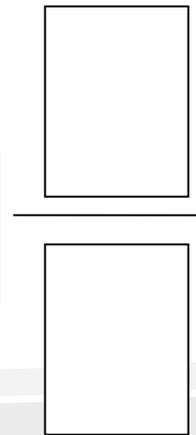
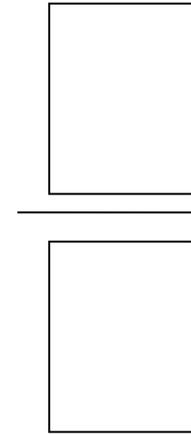
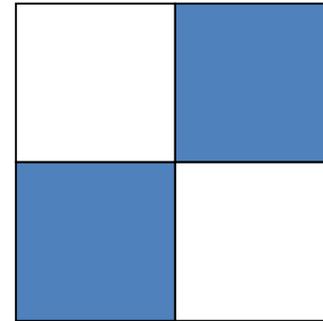
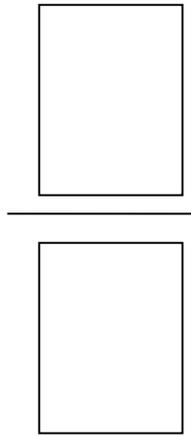
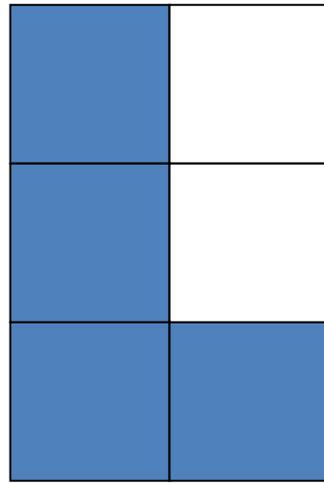
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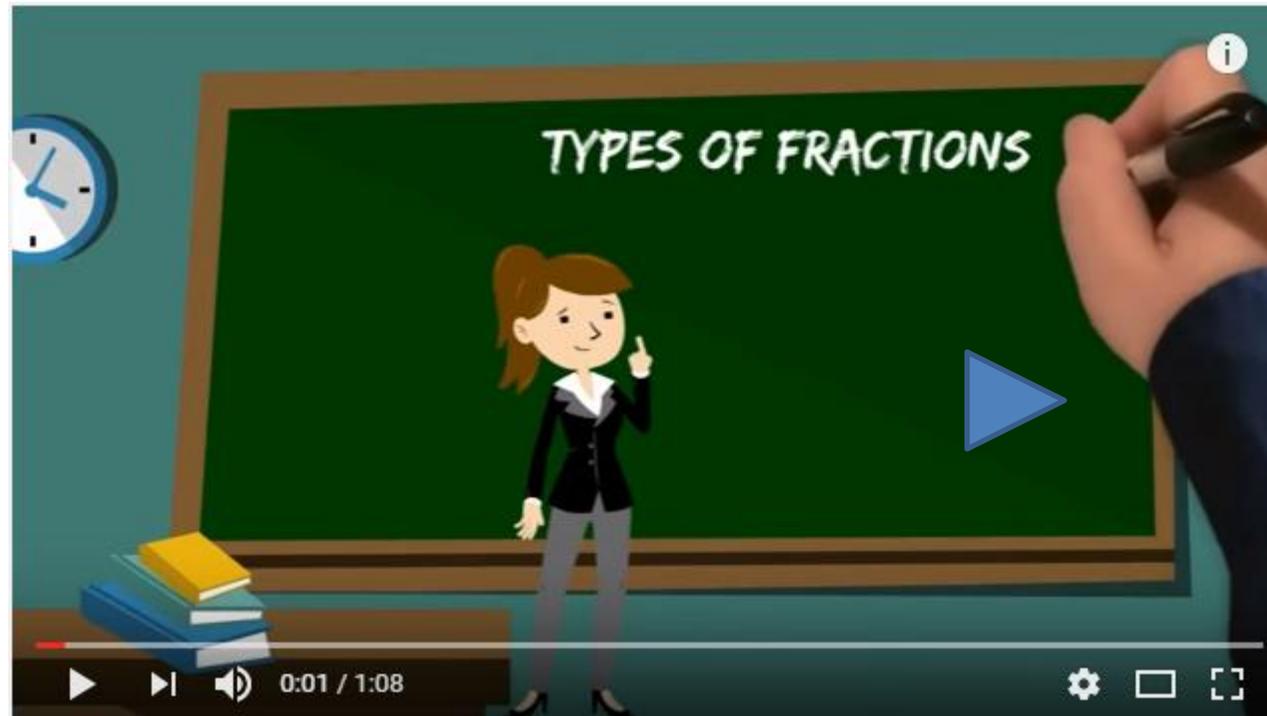
The **denominator** tells us...



Find the fraction of these shapes



Types of Fractions: **Proper** – **Improper** – **Mixed**



<https://www.youtube.com/watch?v=kCIkeSoCd8Q>



Types of Fractions: **Proper** – **Improper** – **Mixed**

Proper fractions: the top number (numerator) is smaller than the bottom number (denominator)

$$\frac{4}{7}$$

Improper fractions: the top number (numerator) is larger than the bottom number (denominator)

$$\frac{8}{5}$$

Mixed fractions: a whole number and a fraction

$$\frac{9}{4}$$