The number ***e*** is a famous irrational number, and is one of the most important numbers in mathematics.

The first few digits are:

2.71828182845904523536028747135 27 (and more ...)

*It is often called **Euler's number** after Leonhard Euler.*
Euler is pronounced "Oiler".

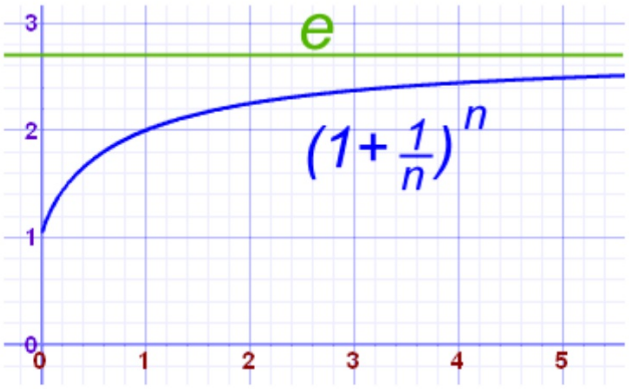
e is the base of the Natural Logarithms.

e is found in many interesting areas, so it is worth learning about!

There are many ways of calculating the value of ***e***, but none of them ever give an exact answer, because ***e*** is irrational (not the ratio of two integers).

But it **is** known to over 1 trillion digits of accuracy!

For example, the value of $(1 + 1/n)^n$ approaches ***e*** as n gets bigger and bigger:



n	$(1 + 1/n)^n$
1	2.00000
2	2.25000
5	2.48832
10	2.59374
100	2.70481
1,000	2.71692
10,000	2.71815
100,000	2.71827

The value of ***e*** is also equal to 1/0! + 1/1! + 1/2! + 1/3! + 1/4! + 1/5! + 1/6! + 1/7! + ... (etc)

recall: ! means factorial and it is found by multiplying all numbers up to that number:
5! = 5·4·3·2·1 = 120

The first few terms add up to: 1 + 1 + 1/2 + 1/6 + 1/24 + 1/120 = 2.718055556

Interesting places e can be found