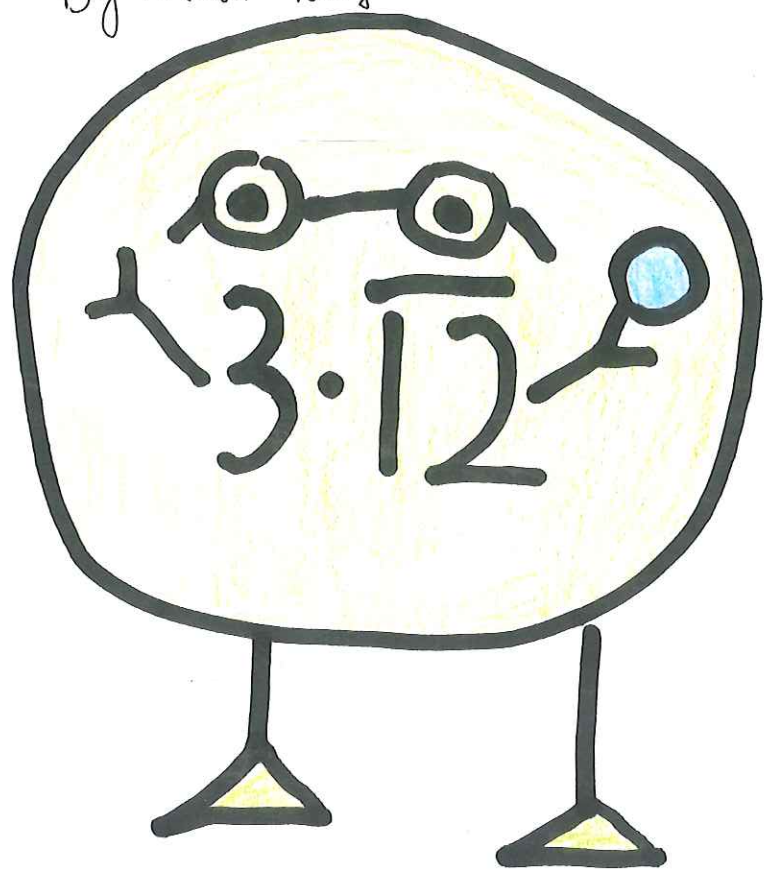
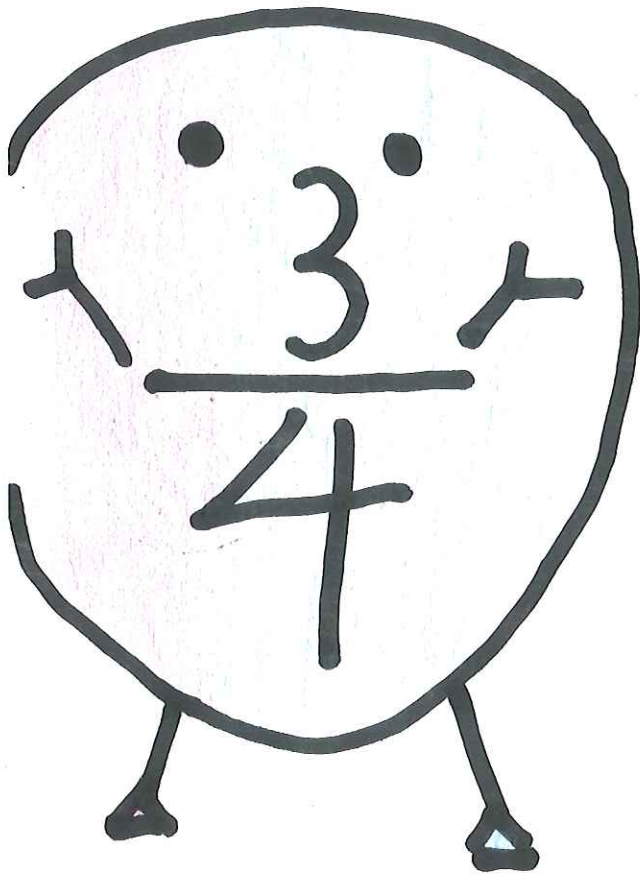




RATIONAL

By: Kalli Yang

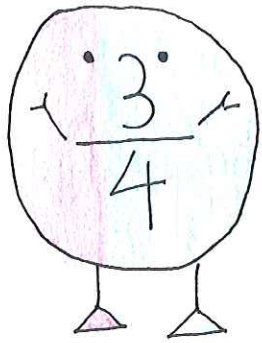


Welcome to the world of
Rational numbers!

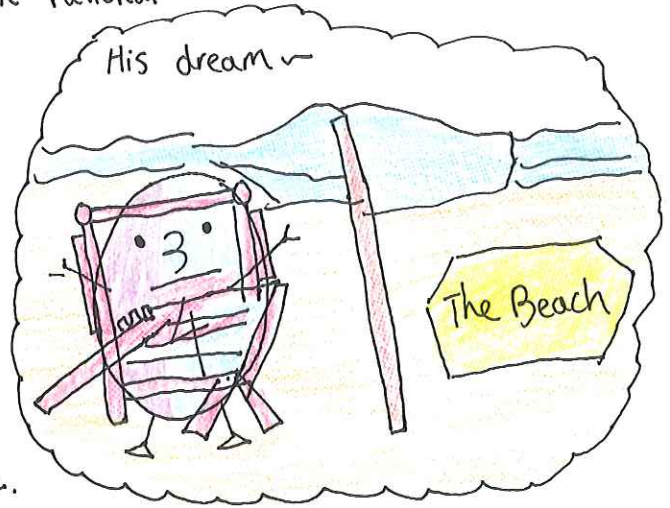
No Irrationals allowed

Especially π  And much much much
more... 

It was a hot sunny day in the world of numbers.
The border soliders guarding the border between rational and irrational numbers are exhausted.



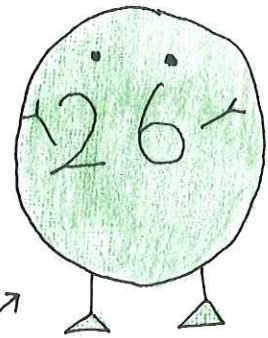
"What a tiring day!
I don't even understand why we need to guard this place! I could be home now, relaxing and not worrying about irrationals jumping over the fence and entering our world."
The solider remarks.



Meet our friend,
Border solider 1,
($\frac{3}{4}$)

The solider says to his friend 26...
26 replies...

Nodding, 26 says: "I know! The irrationals haven't tried to come over for ages, this is a waste of time and effort."



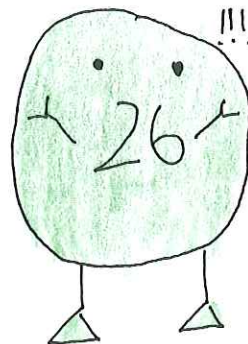
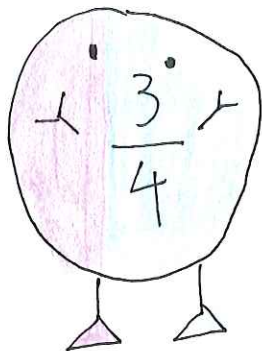
Meet our other friend
Border solider 2,
(26)

Suddenly, footsteps echo through the pavement. A hand pokes out from behind a door. It was border solider 3, 0.89! Unlike $\frac{3}{4}$ and 26, 0.89 takes his job seriously. He gasps in shock...

" $\frac{3}{4}$, 26, what are you guys doing?
Don't you know that the general is checking this border today!?!?"



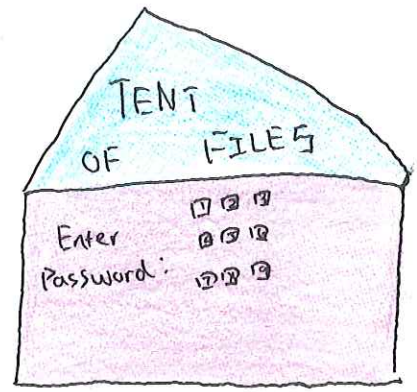
Meet our other, other friend,
0.89,
the 3rd solider!



"Oh
No!!!!"

The two soliders stare at each other... "Oh no!"

The soliders hurry to meet the general... Mr. $3.\overline{12}$

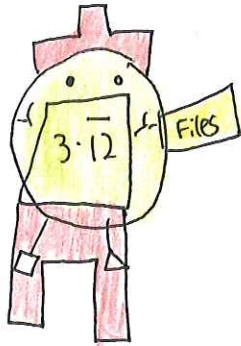
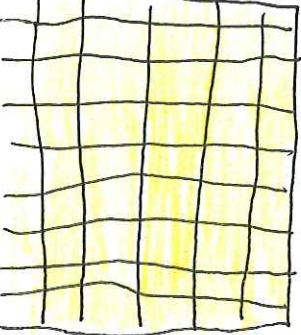


The General,
 $3.\overline{12}$

General award

Mr. $3.\overline{12}$'s reason to come is to check the files of rational and irrational numbers, the border soliders hurry to greet him and show the officer where the files are stationed.

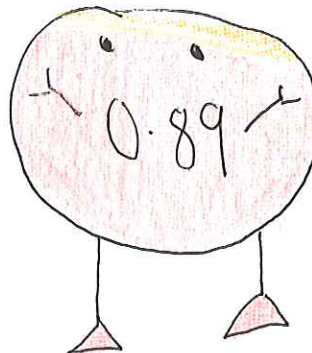
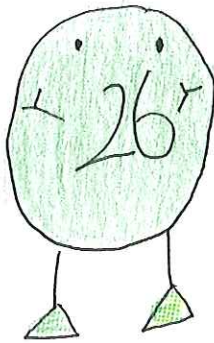
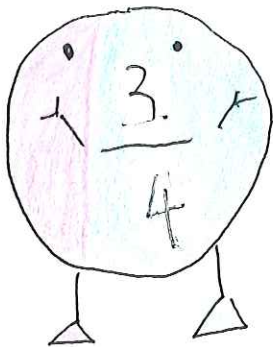
THE FILES



He sits down and goes through the files slowly, one by one...

After a MILLION YEARS...

Finally, Mr. $3.\overline{12}$ glances up, he exclaimed to the bewildered soliders: "An irrational file is missing, it has escaped into our world! we must go find it!"



The soliders look at each other... "There must be a mistake, we don't even know... what irrational numbers are, or even rational numbers, let alone find them!" They mumble.

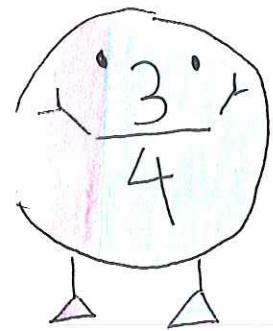
Mr. $3.\overline{12}$ calmly replies: "well, then listen carefully, I'll teach you ~"



"Now listen carefully," he says.
First of all, a rational number is a number that can be shown as a fraction, whilst an irrational number cannot. A rational number can be terminating or repeating, so take me for example, I'm $3.\overline{12}$ which is a rational number. A terminating number is a number that ends, so 2, 89, 3.22 , 1.6 , all examples of terminating numbers.

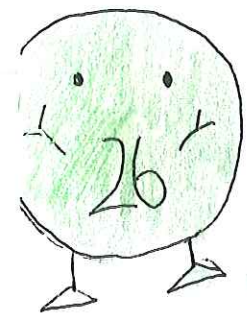
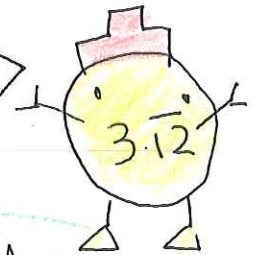
THE CHART

Rational: SHOWN AS A FRACTION	Terminating and Repeating
Irrational: Can't be shown as a fraction	Non terminating and non repeating



OH! I get it, so I'm $\frac{3}{4}$ which is a fraction, so I'm rational!

Yes, though $\frac{3}{4}$ can also be shown as 0.75 or 75%. Terminating numbers.



And I'm 26, which is a terminating number and can be shown as a fraction, $\frac{26}{1}$ right?

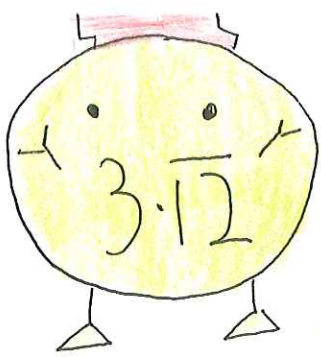
Yep! That is right!



I'm 0.89, which is also a terminating number and can be shown as a fraction,

$$\frac{89}{100}$$

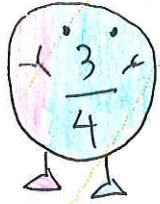
Correct! Let's move on.



So just to clarify, an irrational number would be a number that is non-terminating (doesn't end) and non-repeating. (Doesn't repeat)

Example of irrational: ~~8615.2975513468...~~ (Non terminating, non-repeating)

- THE QUESTION - ???



: Well, then π is an irrational number right? Cause it goes on forever.

- THE ANSWER -



That is partly correct, π is an irrational, and it does go on forever, (non-terminating) but not all numbers that go on forever are irrational. If it's repeating, like me, $3.12121212...$ (repeats and goes on forever), it's rational. π is irrational because it's non-terminating, non-repeating, which cannot be shown as a fraction.

Irrational - Non terminating (doesn't stop) and
Non repeating (does not repeat)

↑
Cannot be shown as
a fraction

Right, let's go find our irrational
Number !!!

- IN THE CITY -

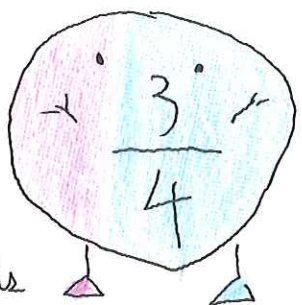
Welcome rationals!



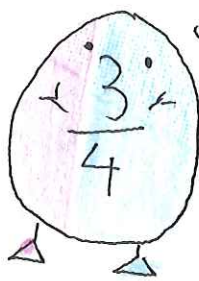
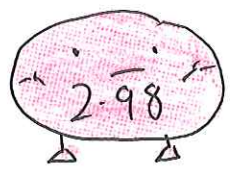
Mr. $3.\bar{12}$ and the soliders arrive in the city of rational numbers. The group looks around. There aren't many numbers out right now.

Mr. $3.\bar{12}$ asks the soliders: "Do you guys see anything?"

I see a $2.\bar{98}$, what does this symbol $(\bar{\quad})$ mean?



Mr. $3.\bar{12}$ replies: "Well, this is a sign that stands for repeating, in which I $3.\bar{12}$ also has this symbol."



ooo thinking ooo

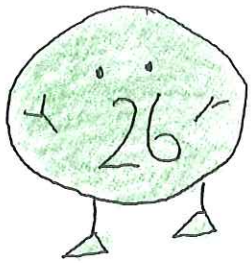
Oh, so this number is repeating, which can be shown as a fraction, therefore it is RATIONAL! Suspect 1.



Moving correct! on...

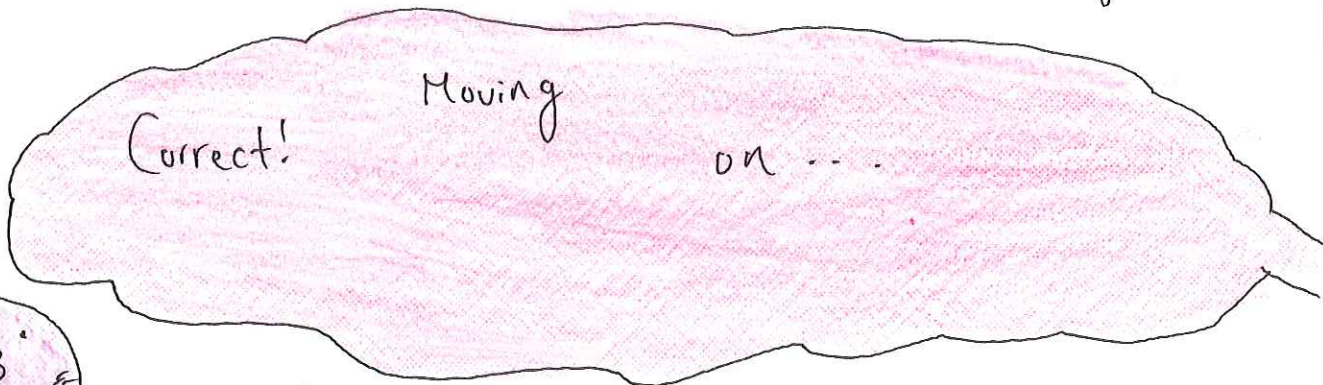
← The gigantic sign.

26 catches sight of another number, $4\frac{3}{7}$. Is this a rational number?



∴ I can see a $4\frac{3}{7}$, this is a rational number because it is shown as a fraction.

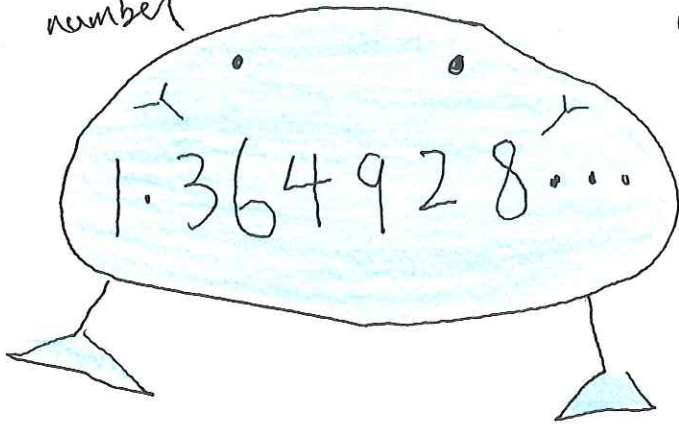
↙ The sign again...



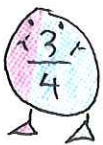
← Suspect 2.

Suddenly, border soldier 3, 0.89 catches sight of another number, it was rather long, trailing behind it was also three dots...

The number



↙ Irrational or Rational?



Hm, its not a terminating number, its non-terminating ...



Its non-repeating too...



This proves that it cannot be shown as a fraction ...



So...

THAT'S

the ...

Irrational!!!

Get him...!!!