

# Divisibility by zero

Ms. Rashmi Chhabra

MSc. (Mathematics) B.Ed Gurgaon Haryana

Date of Submission: 25-12-2020

Date of Acceptance: 06-01-2021

**ABSTRACT:** Anything divided by zero is not undefined. It's defined.

Division by zero is not possible at all. We cannot divide any number by zero.

$1/0.1 = 10$  1 is divided in 0.1 size Parts. Total parts of 1 are 10

$1/0.0001 = 10000$ . 1 is divided in 0.0001 size parts. TotalParts of 1 are 10000

## I. INTRODUCTION

How we define a fraction ? A fraction is a part of a whole. It is formulated as  $\frac{\text{Parts required}}{\text{Total number of parts}}$

So when we write a fraction , total number of parts of that thing comes in the denominator. Now if total parts of a thing become zero , that means that thing does not exist. If that thing exist then at least it has 1 full part. So total number of parts cannot be zero , it should be at least one. Zero parts means that thing does not exist.

In division  $a/b$  means a is divided in b parts and.  $a = bx$  . Division by zero means a is divided in zero parts. We can't divide anything in zero parts. If total parts are zero that means that thing will not exist at all. So division by zero is not possible at all. It does not exist. b cannot be zero , so  $a/0$  is not possible . That's why division law is not valid here. a is not equal to bx in this case.

That's why in defining rational number also we write denominator cannot be zero.

Inconcept of probability, Probability of an event = favourable outcome / Total outcomes. Here also total outcomes of an event cannot be zero. If that event exist it should have at least 1 outcome. So here also zero cannot come in denominator.

$a/0$  means we have taken a part out of zero parts ( fraction) or divide a in zero part ( division). In both cases it's not possible to divide a in zero parts. Division by zero is not possible at all.

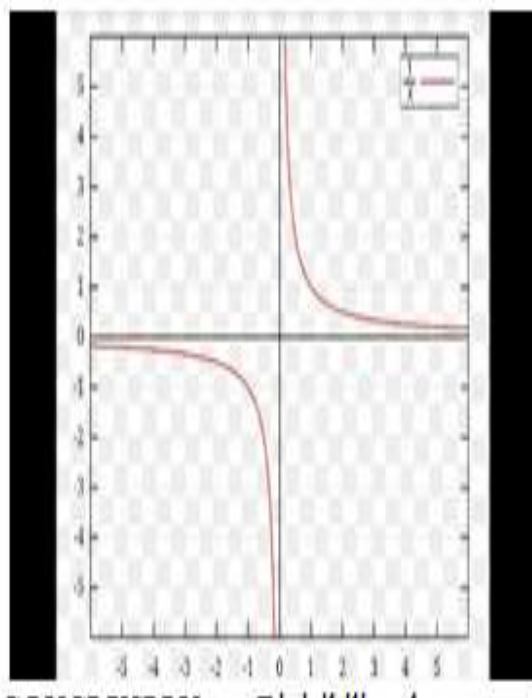
$a/0$  is not equal to infinity.

$1/1 = 1$ . 1 is divided in 1 part So total parts are 1

As we decrease the size of the part of 1, number of parts increases. Number of parts tend towards infinity. But does not reach there. It breaks. It does not exist when size of a part is 0.

As  $1/0$  means 1 is divided in zero parts then Division is not possible .If that thing exist it should have at least 1 part. So division by zero does not exist.

That's why graph of  $1/x$  does not exist at  $x=0$  , it's not infinity.



GRAPH OF  $1/x$



## II. CONCLUSION

Divisibility by zero is not possible. It is not possible to divide any number by zero.

Division by zero does not exist.