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Division by Zero   Zero (number)   Numbers (mathematics)

Is 0/0 undefined, 1, or infinity?

4 Answers

Eric Platt, PhD in Mathematics
Answered Jun 14, 2018 · Upvoted by Patrick Tam, PhD Mathematics, University of California, Davis (2018) · Author has **984** answers and **1.5m** answer views

$\frac{0}{0}$ in of itself is meaningless. A rational number cannot have a zero in the denominator.

Supposing that we did want it to make sense it would have to be a solution to

$x \cdot 0 = 0$

Well, any real number times zero is zero, and we would like division to give a unique answer. Still no good.

As a limit though things are more interesting.

$\lim_{x \to 0} \frac{0}{x} = 0$

$\lim_{x \to 0} \frac{x}{x} = 1$

$\lim_{x \to 0} \frac{mx}{x} = m$

$\lim_{x \to 0^+} \frac{x}{x^2} = \infty$

$\lim_{x \to 0^-} \frac{x}{x^2} = -\infty$

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Kumar Ujjwal, Student
Answered Jun 13, 2018

Hi there

You can tell 0/0 is undefined till class 10th. 0/0 is an indeterminate form means which we can't evaluate by applying the algebra which we have learnt till class 10th and 12th.

Fir finding 0/0 we take the help of **limit.**

You will learn about limit and much more in class 12th in calculus portion .

At secondary school level u can assume 0/0 as undefined.

Hope it help u to understand better.

Thank you. :)

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Ritanshu Singh, Founder of R-Developer (2017-present)
Answered Jun 13, 2018 · Author has **112** answers and **28.5k** answer views

Let's see.....

1/1 means dividing 1 into 1 parts.

1/2 means dividing 1 into 2 parts.

-1/2 means dividing -1 into 2 parts

0/0 means dividing 0 into 0 parts, the first thing is that we have to divide 0 and that's ok but into 0 parts is not because simply think that how you can divide a thing into 0 parts, that does not makes any sense.

And that's why 0/0 is undefined.

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Victor Gao, Took a Multivariable Calculus class
Answered Jun 13, 2018

0/0 by itself doesn't really mean anything; 0/0 as a solution for solving an unknown means whatever you tried didn't work. If you arrive at a point where a variable is equal to 0/0, you'll have to find some other way to calculate it since it can be any of the above.

For example, that one "proof" proving that 1=2 happened because someone performed 0/0 and kept on going.

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