## Michigan Math Club

Thursday at 4pm in EH1360 Pizza and pop outside afterwards!

Full credit for approximately correct?

## Thomas Anderson



## 02 December 2021

We use approximations in our day to day life to get by: approximate recipes, approximations to the right haircut, short hand, etc. On the other hand, It's correct to think of mathematics as about studying in some sense 'exactness':  $\sqrt{2}$  is the solution to  $x^2 - 2 = 0$ . Still, when it comes time to use math in the real world it's often required to be a little more practical. How do we know how large  $\sqrt{2}$  is? How do we do anything with it, and how did people in the past work with it? And what about all the other more complicated beasts than the humble  $\sqrt{2}$ ? This is getting at the idea of approximating, approximating processes, and knowing **exactly** how we can work efficiently and accurately with numbers, functions, and other objects in mathematics.