

1116-VJ-1198 **Maarten McKubre-Jordens*** (maarten.jordens@canterbury.ac.nz), School of Mathematics & Statistics, University of Canterbury, Private Bag 4800, Christchurch, Canterbury 8140, New Zealand, and **Zach Weber**. *Paraconsistent Measurement of the Circle: An Invitation to Inconsistent Mathematics*.

A theorem from Archimedes on the area of a circle is proved in a setting where some inconsistency is permissible, by using paraconsistent reasoning. The new proof emphasizes that the famous method of exhaustion gives approximations of areas closer than any consistent quantity. This is equivalent to the classical theorem in a classical context, but not in a context where it is possible that there are inconsistent infinitesimals. The area of the circle is taken ‘up to inconsistency’. The fact that the core of Archimedes’s proof still works in a weaker logic is evidence that the integral calculus and analysis more generally are still practicable even in the event of inconsistency. (Received September 17, 2015)