Talk Math 2 Me

An Introduction to Fractional Calculus

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Abstract

Fractional calculus is a tool which involves taking derivatives or integrals to non-integer orders. In recent decades, fractional order differentiation and integration have been used to study differential equations with real world applications ranging from the natural sciences and engineering to social sciences and economic models. For example, using Mathematica and Matlab, we can use advanced theoretical and computational methods to model the viscoelastic properties of cells. In this session, we will learn how to take the fractional derivative for some functions such as $f(x) = \sin(x)$.