Ps 2 Problem 3

Adam Guerin

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Abstract

This document has an outline of a program that test overflow/floating point errors in python.

1 Introduction

When dividing or square rooting by very small numbers sometimes you get errors even in very simple calculations.

2 Methods

Let's calculate the roots of a quadratic function $.001x^2 + 1000x + .001$ using two equivalent functions that you can see in the code that i dont want to type up here in latex because it would take too long.

3 Results

proof of me passing with my normal quadratic code.

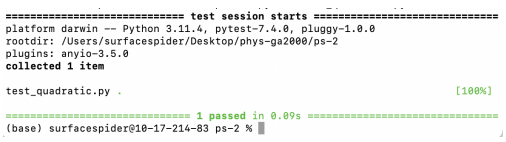

Figure 1: mine passed with just the naive implementation so thats unfortunate. i didnt have to pick and choose my specific root calculations to get it

4 Discussion

You're supposed to see issues with one calculation and not the other but my errors for the regular calcuation were (-9.999894245993346e-07, -999999.999999) and my errors for the other calculation were (-1.000000000001e-06, -1000010.5755125057) so only the other one gave me a failed root. go figure