CS2205: Theory of Computation
Problem Class XVII

Problem XVII.1. *The Division-By-Zero Problem*

Parameters: *A MOCCA program P, and a potential input x to P.*

Returns: *YES if P would have executed a division by zero had we run it on input x; NO otherwise.*

1. Adjust the proof of the non-computability of the Halting Problem to prove that the Division-By-Zero Problem is non-computable.
2. Now prove that the Division-By-Zero Problem is non-computable this time using a reduction of the Halting Problem to the Division-By-Zero Problem.