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Numerical Methods

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Homework 1

1. See sin function.
   1. This should compute the sine to the requested degree of error. It does so using the taylor series to approximate each term, adds them up and exits the loop when the term becomes smaller than the provided error.
2. Single precision
   1. 2^-30
      1. 30800000 hex
   2. 64.015625
      1. 84004000 hex
   3. -8\*2^-24
      1. B5000000 hex
3. Which are machine numbers?
   1. No
   2. yes
   3. No
   4. No
   5. yes
4. See code
   1. Here’s what went wrong:
   2. Some of the values seem off from what they would be expected to be for the given solution we are intending on calculating. Particularly how the y value seemingly randomly becomes 0.