MATHEMATICS
TEXAS A&M UNIVERSITY

MATH 609

NUMERICAL ANALYSIS

FALL 2022

LAB 04

SUMMARY RESULTS

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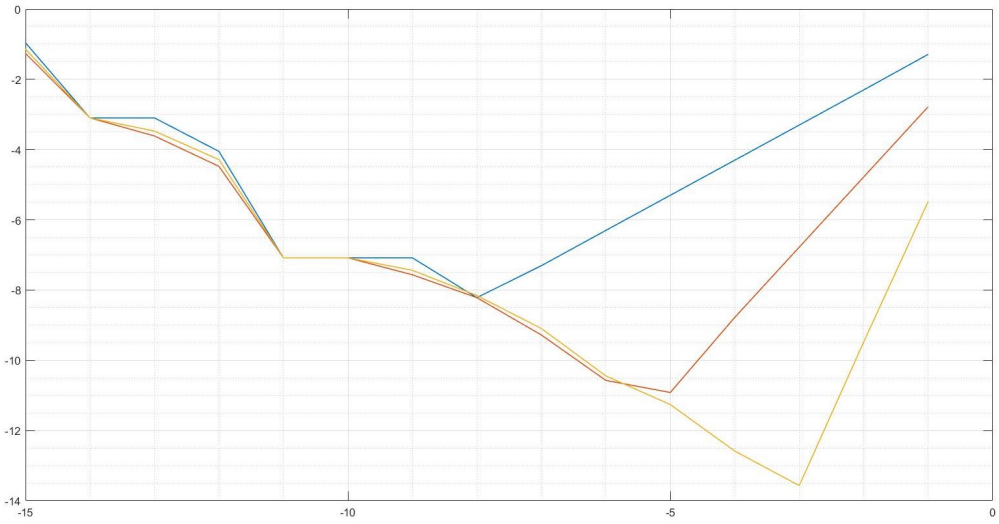
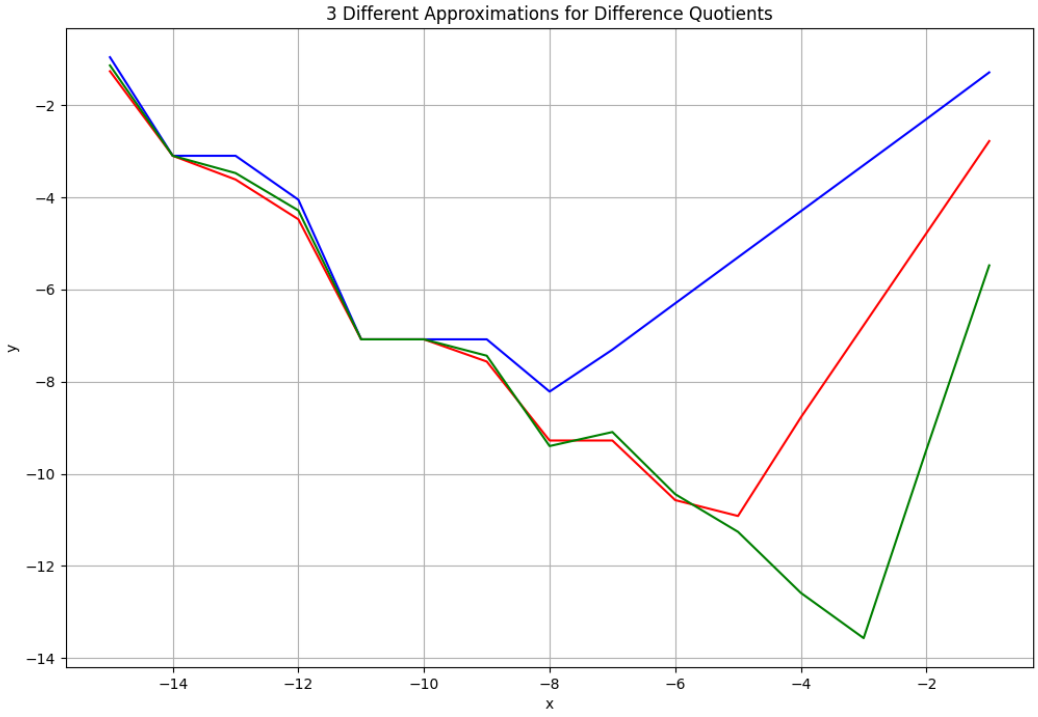
EXERCISE I: DIFFERENCE QUOTIENTS

MATLAB:



PYTHON:



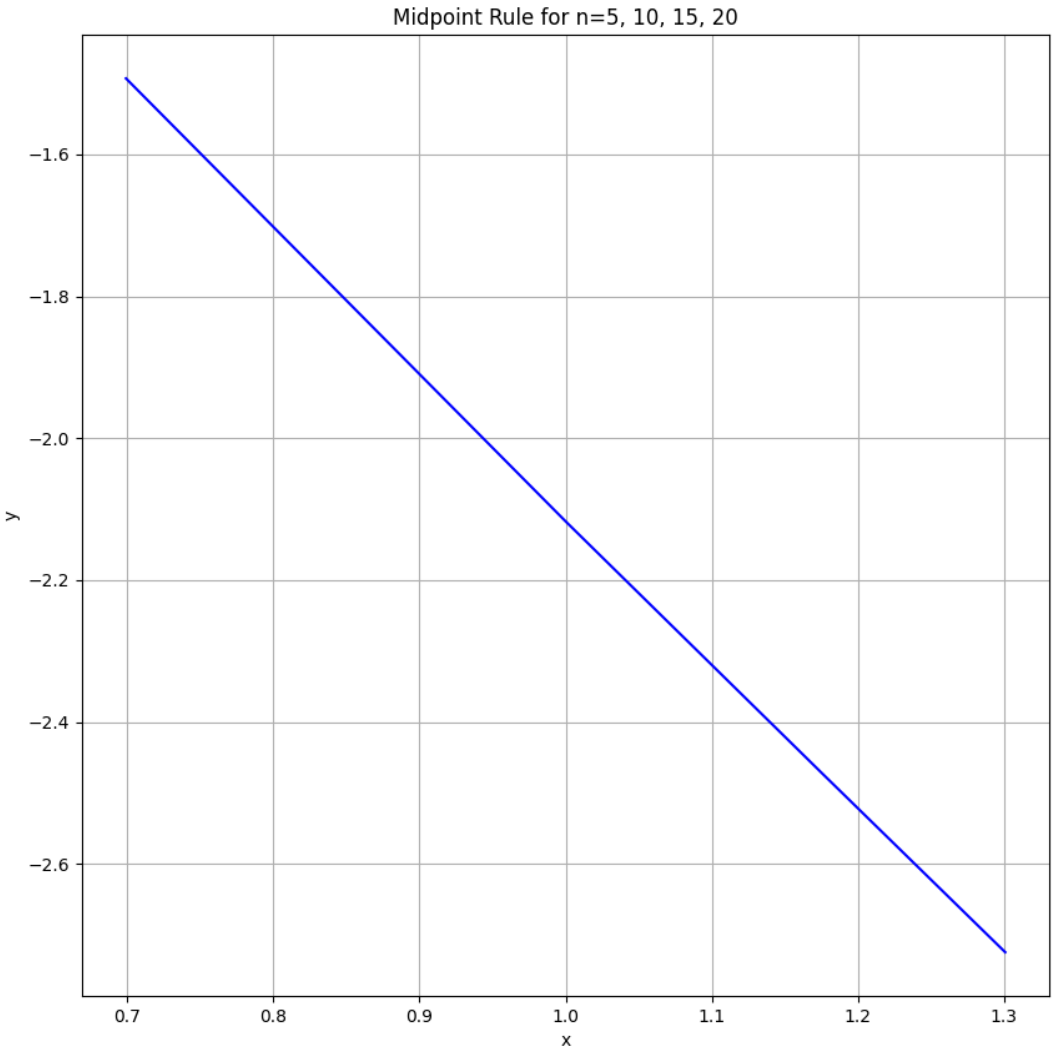
For Sigma 1 → m1= 1.1479149063048344

For Sigma 2 → m2 = 2.125942132967727

For Sigma 3 → m3 = 4.191595810682771

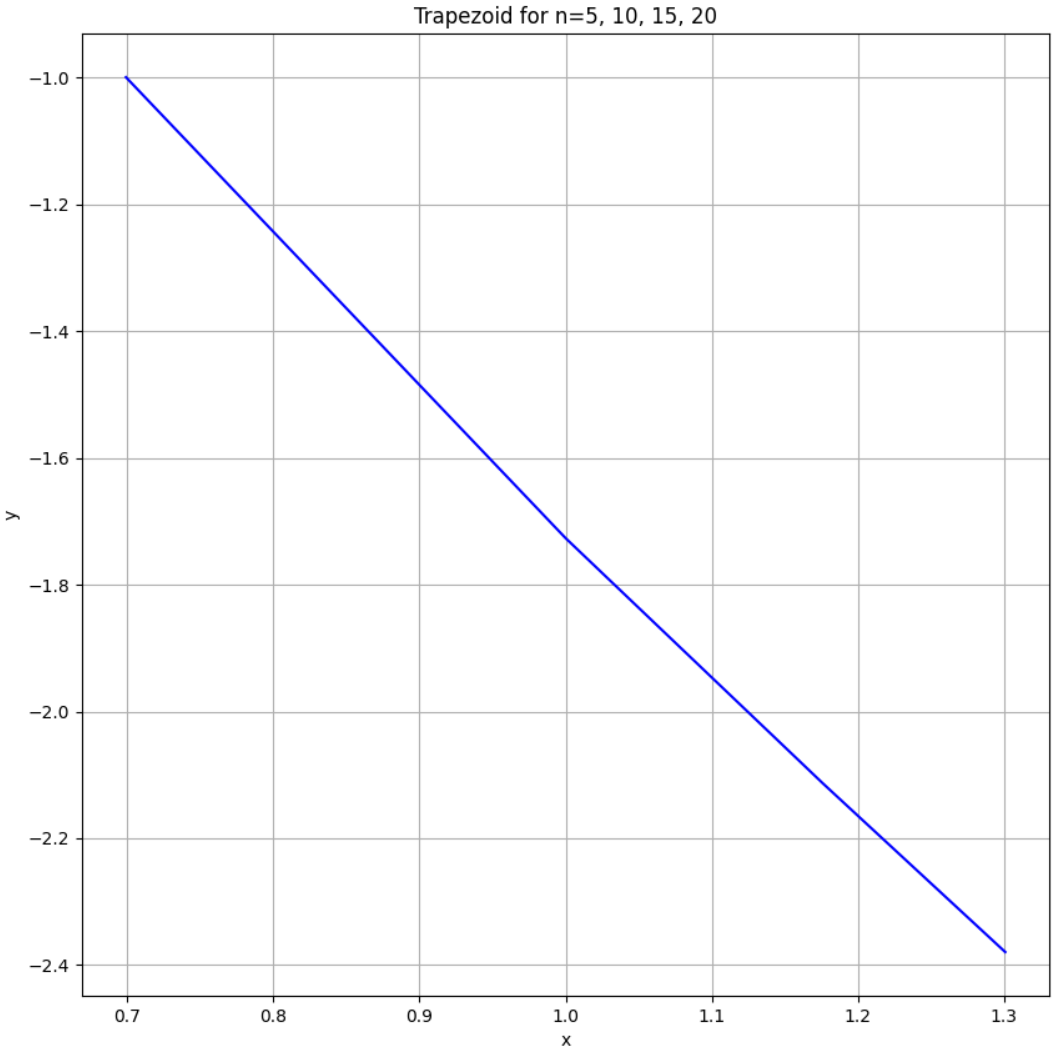
EXERCISE II: NUMERICAL INTEGRATION

Midpoint:



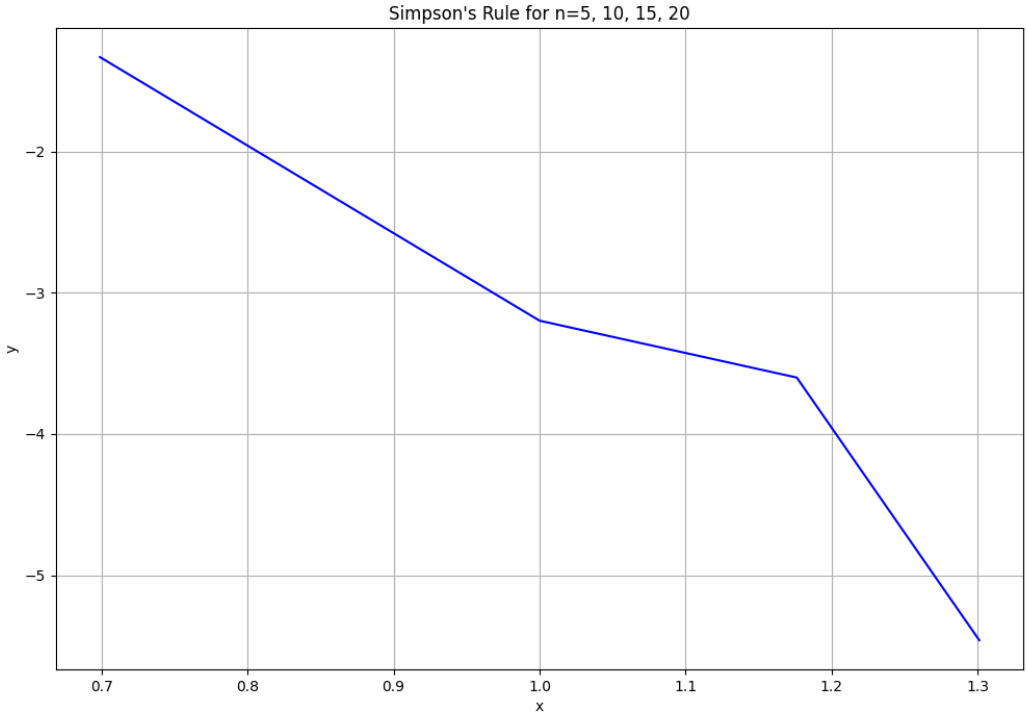
Alpha 1 = 2.0546262672572797

Trapezoid:



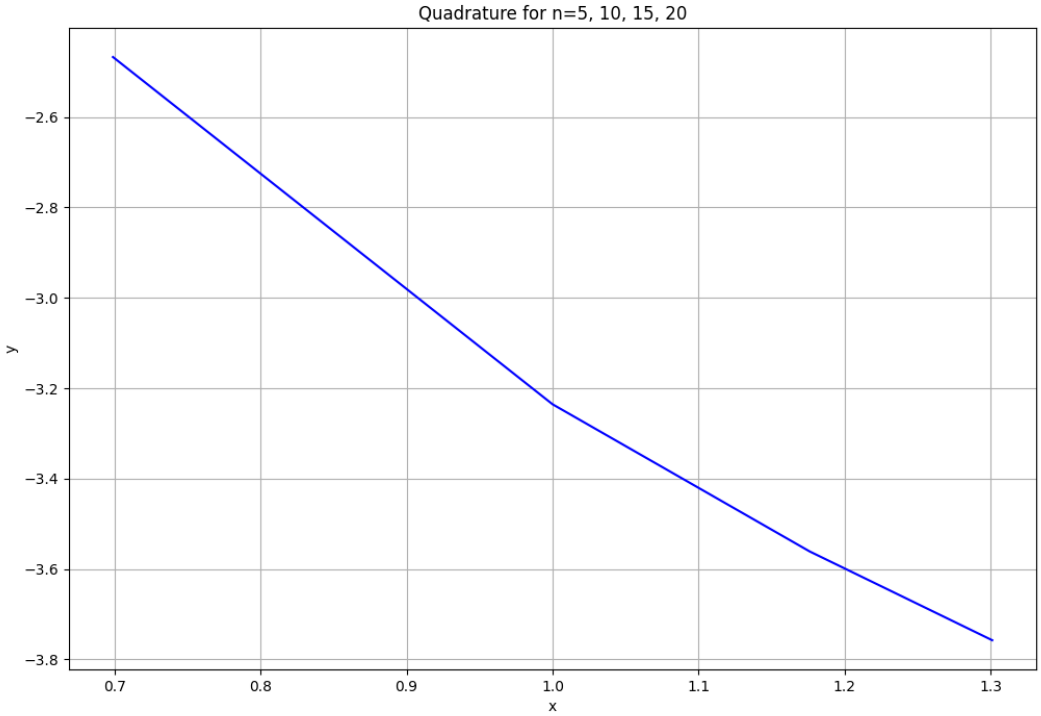
Alpha 2 = 1.5941381226834537

Simpson's:



Alpha 3 = 4.753770675302195

Quadrature:



Alpha 4 = 2.5525026147736556