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Prob1:

(i) 2.1565156475

(ii) 0.0104227616

Because Simpson's Method is more precise

So use it as the right answer

and then compare to the answer calculate by Trapezoid Method

Prob2:

A total of 100000000 random points are used; the volume of the ellipsoid is 25.1343633600.

Prob3:

(1) The total flux is 113159661645.4865400000 (Volt.m)

(2) The total flux is 113159661645.4865400000 (Volt.m)

(3) The total flux is 113162181200.1805400000 (Volt.m)

(4) The total flux is 9338850610.7133789000 (Volt.m)

Use both Riemann Sums and Simpson's Method to calculate the answer

Prob4:

The smallest positive root of Prob.4(a) is 1.301498004

The largest negative root of Prob.4(a) is -3.377591421

The smallest positive root of Prob.4(b) is 0.909607743

The largest negative root of Prob.4(b) is -0.458390113

Use Newton Raphson Method to calculate the answer

Prob5:

$L1 = (Rmsme * (1 - (Me / (3 * Me + 3 * Ms))^{(1/3)}), 0)$

$L2 = (Rmsme * (1 - (Me / (3 * Me + 3 * Ms))^{(1/3)}), 0)$

$L3 = (-Rmsme * (1 + (5/12) * (Me / (Ms + Me))), 0)$

The distance ratio of L1: 0.9899970

The distance ratio of L2: 1.0100030

The distance ratio of L3: 1.0000013

Use the formula from Wikipedia and then calculate it