Math 122 #8
Trapezoidal and Simpson's Method

Approximate the following definite integrals using Trapezoidal and Simpson's Method with $n = 4$ and $n = 10$

1. $\int_0^2 \sqrt{1+x^3}\, dx$

2. $\int_0^1 \sqrt{x}\sqrt{1-x}\, dx$

3. $\int_0^1 \sin(x^2)\, dx$

Answers

1. $T_4 = 3.2832$, $T_{10} = 3.24798$, $S_4 = 3.23961$, $S_{10} = 3.24127$

2. $T_4 = 0.3415$, $T_{10} = 0.37963$, $S_4 = 0.37200$, $S_{10} = 0.38752$

3. $T_4 = 0.315975$, $T_{10} = 0.311117$, $S_4 = 0..309943$, $S_{10} = 0.31026$