MATH 321-01 (161)
HW # 5
Due Dec. 1, 2016

Q1. Do problem 11 page 210 of your textbook.

Q2. Use Simpson's Rule to approximate

$$\int_1^{1.5} x^2 \ln x dx$$

and find a bound for the error.

Q3. A car laps a race track in 60 seconds. The speed of the car at each 6-second interval is determined by using a radar gun and is given from the beginning of the lap, in feet/second, in the following table Use the Composite Simpson's rule to determine the length of the

Time	0	6	12	18	24	30	36	42	48	54	60
Speed	124	134	148	156	147	133	121	109	99	85	78

track.

Q4. Consider the following quadrature formula:

$$\int_{-1}^{1} f(x)dx = af(-1) + bf(1) + cf'(-1) + df'(1)$$

Determine the constants a, b, c and d such that this formula has degree of precision 3.