Name: _____ **Quiz 12**
MAT 295 **Fall 2016**

Problem 1: Using 4 subintervals, approximate the integral $\int_0^4 x^2\,dx$ using the following methods:

(a) Left Hand Sums

(b) Right Hand Sums

(c) Midpoint Rule

(d) Trapezoidal Rule

(e) Simpson's Rule

Problem 2: Evaluate the following sum by representing it as a Riemann integral and evaluating the integral:

$$\lim_{n\to\infty}\sum_{k=0}^{n-1}\frac{2}{n}\left(\left(\frac{2i}{n}\right)^3+\frac{6i}{n}-10\right)$$

Problem 3: Evaluate the integral by interpreting it in terms of area: $\int_{-2}^{2}\left(1+x-\sqrt{4-x^2}\right)\,dx$