

**ESO 208A; ESO 218**

**Computational methods in engineering**

**Tutorial # 6**

**September 26, 2013**

1. Integrate the following function

$$\int_1^2 \left( x + \frac{1}{x} \right)^2 dx$$

- (a) Use analytical method.
- (b) Use the trapezoidal method with  $n = 1$ . Find the absolute and the approximate errors.
- (c) Use the trapezoidal method with  $n = 2$ . Find the absolute and the approximate errors.
- (d) Use Simpson's 1/3 Rule. Find the absolute and the approximate errors.