

**KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS**  
**DEPARTMENT OF MATHEMATICS AND STATISTICS**  
**MATH 102 - QUIZ 1**

Name:

Student ID #:

**Question 1.** Write the limit below as an integral

$$\lim_{n \rightarrow \infty} \sum_{i=1}^n \frac{9(n+2i)}{n^2},$$

whose lower bound is 1.

**Question 2.** Find the approximation, **but do not do the operations**, of the integral below by a right Riemann sum with  $n=6$ .

$$\int_1^4 \frac{\ln x}{x} dx$$

**Question 3.** Find the derivative of the function

$$y = \int_{\sin(2x)}^{2^x} \cos(t^2) dt$$

**Your Solution.**