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

Name:
Student ID #:

Question 1. Evaluate the following integrals:

(1)
$$\int_0^{\pi/2} |\frac{1}{2} - \sin(x)| \mathrm{d}x$$

(2)
$$\int_0^2 (\sqrt{4 - x^2} - \sqrt{1 - (x - 1)^2}) \mathrm{d}x$$

Question 2. If $y = \int_{\sqrt{t}}^{t^2} \sqrt{1 + u^2} \mathrm{d}u$ then find $\dfrac{\mathrm{d}y}{\mathrm{d}t}$.

Question 3. Find the numbers b so that the average value of the function $y = 2 + 6x - 3x^2$ on the interval $[0, b]$ is equal to 3.

Your Solution.