King Fahd University of Petroleum and Minerals
Quiz 1 Math 102-112 Duration 25 minutes

Question 1 Use three rectangles and midpoints to approximate the area under the graph of $f(x) = \frac{x}{x+2} + 1$ from $x = -1$ to $x = 2$.

Question 2 Evaluate

$$\lim_{n\to\infty} \sum_{i=1}^{n} \frac{1}{2n-i+1}.$$

Question 3 Evaluate

$$\int_{-2}^{1} \sqrt{8-x^2+2x}\, dx\,.$$

(You may interpreting it as an area.)

Question 4 Evaluate $f(\mathrm{e})$ if

$$\int_{\mathrm{e}^{x^2}}^{2} \ln(t) f(t)\, dt = \mathrm{e}x - 3f(1)\,.$$

Question 5 If the velocity of a particle moving along a straight line is given by $v(t) = 1 - 2\sin t$, then find the distance traveled during the interval time $[0, \frac{\pi}{2}]$.