

King Fahd University of Petroleum and Minerals  
Math. & Stat. Departement  
QUIZ # 1

Name	ID	SEC	Sr
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Q1) Estimate the area under the graph of  $f(x) = x + \sin x$  from  $x = 0$  to  $x = \pi$  by using four rectangles and right-endpoints.

Q2) The velocity of a particle ( in meter per second) is given by  $v(t) = t^2 - 2t - 3$ ,  $2 \leq t \leq 4$ . Find the total distance travelled by the particle in the given time period.

Q3) Evaluate  $\int_{-\sqrt{3}}^0 \sqrt{12 - 4x^2} dx$

Q4) Evaluate  $\lim_{n \rightarrow \infty} \sum_{i=1}^n \frac{1}{1+\frac{i^2}{n^2}} \frac{1}{4n}$

Q5) If  $\int_{-1}^1 f(x) dx = 3$ ,  $\int_1^3 f(x) dx = 4$  and  $\int_{-1}^0 f(x) dx = 3$ , then find  $\int_0^3 f(x) dx$ .

Q6) Find the equation of the tangent line to the curve  $f(x) = 4 + x^2 \int_{x^2}^{x^3} \sqrt{3+t^2} dt$  at  $x = 1$ .