King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 232   Quiz 1 (Term 141)

Name : .... **ID #**..................................... Serial #: ....

Question 1: Let $r \in R^+$, and define

$$A_r = \{x \in R : |x| < r\}.$$

- Determine $\cup_{r \in R^+} A_r$ and $\cap_{r \in R^+} A_r$.

- Define the term "a partition of a set".

- Show that $P = \{A_r : r \in R^+\}$ is not a partition of R.

Question 2: For $A = \{a \in R : |a| \leq 1\}$ and $B = \{b \in R : |b| = 1\}$, give a geometric description of the points in the xy-plane of $(A \times B) \cup (B \times A)$.