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Department of Statistics

Semester – 3   **(Year – 2020-21)**

Assignment 1: Limit and Continuity of Function

Q.1 Define limit of the function and evaluate the followings:

(1) $\lim\limits_{x\to 1} \dfrac{2x^3 + 6x^2 + 7x - 15}{3x^3 - 2x - 1}$ (2) $\lim\limits_{x \to 9} \dfrac{x^{\frac{5}{2}} - 243}{x^{\frac{1}{2}} - 3}$

Q.2 Define function and explain meaning of continuity of a function at x = a.

If $f(x) = \begin{cases} k(5x-1), & x > 2 \\ 3xk + 1, & x \le 2 \end{cases}$ **is continuous at point** $x = 2$ **then find** k.

Assignment 2: Probability

Q.3

Write the mathematical definition of Probability. The ratio of three students solved an example of statistics correctly are 4:5:3. If an example of statistics is given to them then find the following probabilities;

(i)   Example will be solved (ii) At least two of them will solve the example correctly.

Q.4

A box contains 8 white, 7 red and 6 black balls. Three successive drawn of 2 balls are made (i) with replacement (ii) without replacement. Find the probability that the first draw would produce white balls, second draw would produce black balls and the third draw would produce red balls respectively.