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UNIVERSITY OF REGINA
DEPARTMENT OF MATHEMATICS & STATISTICS

STAT 289

TEST # 1

Thursday, July 19, 2001

1. Using standard widths of 5.0 years, plot a histogram for the following age frequency distribution:

Age(years)	Frequency
20 - 24.9	6
25 - 29.9	12
30 - 34.9	32
35 - 39.9	24
40.- 44.9	8

(a) How many individuals were used to form this sample?

$$\sum_{i=1}^{5} f_i = 82$$

(b) Calculate $\bar{x}$ and s.

(c) Find the median for this set of data.

(d) Approximately 95% of the individuals sampled have ages in what range?

(e) What percentile does age 40 represent?

2. Two events A and B are such that $P(A) = 0.5$, $P(B) = 0.3$ and $P(A \cap B) = 0.1$.

(a) Find $P(A \cup B)$

(b) Find $P(A \mid B)$

(c) Find $P(\bar{A} \mid B)$

3 A communications network has a built-in safeguard against failures. In this system, if Line I fails, it is bypassed and Line II is used. If Line II also fails, it is bypassed and Line III is used. The probability of failure of any of these three lines is .01 and the failures of these lines are independent events. What is the probability that this system of three lines does not completely fail?