

**4. PROBABILITY INEQUALITIES (CHEBYSHEV'S)**

Q1) Let  $X$  be a random variable having an unknown distribution with mean  $\mu=10$  and variance  $\sigma^2=16$ . Find the following probability. " Use Chebyshev's theorem"

- (a)  $P(-6 < X < 26)$
- (b)  $P(|X-10| \leq 12)$
- (c)  $P(|X-10| > 12)$

Q2) Use Chebyshev's theorem to find what percent of the values will fall between 161 and 229 for a data set with mean of 195 and standard deviation of 17.

Q3) Use Chebyshev's theorem to find what percent of the values will fall between 175 and 241 for a data set with a mean of 208 and standard deviation of 11.