Name: ----------ID: ----------

Q.No.1: A random sample of 50 suspension helmets used by motorcycle riders and automobile race-car drivers was subjected to an impact test, and on 18 of these helmets some damage was observed. Using the point estimate of *p* obtained from the preliminary sample of 50 helmets, how many helmets must be tested to be 95% confident that the error in estimating the true value of *p* is less than 0.02?

Q.No.2:

A jam producer claims that the mean weight of jam in a jar is exactly 230 grams. A random sample of 8 jars is selected and the weight of jam in each jar is determined. The average weight of these 8 jars is 225.25. Assume that the weight of jam in a jar is normally distributed with a standard deviation of 4 grams.

a). Compute a 95% confidence interval (CI) for the mean weight of jam.

b). Interpret the interval you got it part (a).

c). Use the interval you got it part (a) to test **H0:** $\mu = 230$ **versus H1:** $\mu \neq 230$. **(Hint: If value of H0 falls outside the CI, Reject H0 otherwise Don't H0)**