

Quiz 8
Week of March 23, 1998

1) Using a random sample of size n drawn from a population with known variance σ^2 , the 90% confidence interval for the population mean will be about

i) 0.65 *ii)* 0.84 *iii)* 1.19 *iv)* 1.53

times as wide as the 95% confidence interval for the population mean (using the same sample).

2) Suppose that two polls are taken of a population of voters in order to determine the proportion who support a particular referendum. One poll is of 400 individuals, the other is of 1600. By coincidence, both polls find that 50% of respondents support the referendum. 95% confidence intervals for the true fraction of voters that support the referendum are calculated separately for the two polls. The confidence interval derived from the smaller poll is

i) one-quarter *ii)* one-half *iii)* two times *iv)* four times

as wide as the confidence interval derived from the larger poll.

3) In May 1992 a poll of 209 Montana residents, conducted by the Bureau of Business and Economic Research at the University of Montana, found that 71 of the 209 respondents felt that their financial status was better than in the previous year. Calculate a 95% confidence interval for the proportion of Montana residents who, in 1992, felt their financial status was better than in the previous year.