II. Darin is also concerned about the weight of page 68 parts. It must be possible for the mean weight of parts to be ≤ 30 mg with a 99% degree of confidence. As indicated on page 68 and reviewed below, a recent test was barely successful. Darin wants to reduce error from the current $\pm.0279$ mg to $\pm.025$ mg. What sample size is required?

Page 68 Problem Review
(see page PS 68)

Given
$\bar{x} = 30.025$ mg
$n = 36$
$z = 2.58$
$s = .065$ mg

$$\bar{x} \pm zs_{\bar{x}}$$

$30.025 \pm .0279$

29.997 mg $\leftrightarrow 30.053$ mg

Note: This range indicates the population mean could be under 30 mg.

III. Check your answer to problem II by calculating the 99% confidence interval using a sample size of 45 and a sample standard deviation of .065. Analyze the result.

IV. How would the solution to problem III change if the sample of 45 had been taken from a population of 500 items?

V. Recalculate the answer to problem III using the finite correction factor.