

$H_0: \mu = 40$ mpg

$H_A: \mu < 40$

Population Standard Deviation: $\sigma = 6$ mpg

Significance Level: $\alpha = .01$

Sample Results: A SRS of $n = 16$ gives $\bar{X} = 36.7$

- 1) Write the rejection rule (RR) for H_0 in terms of z-scores. (Note: you are NOT using 36.7 here)
- 2) Write the rejection rule (RR) for H_0 in terms of \bar{X} .
- 3) Find the probability of a Type II error if $\mu=38$ [*i.e.*, $\beta(38)$]
 - a) Find the sample z-score (z_s). (Note: you ARE using 36.7 here)
 - b) State a conclusion for the test at the $\alpha = .01$ level.
 - c) Find the p-value.