

Null and alternative hypotheses:

$$H_0: \mu = 40$$

$$H_1: \mu < 40$$

Test statistics:

$$z = \frac{\bar{x} - \mu_0}{\sigma/\sqrt{n}} = \frac{38.7 - 40}{12.5/\sqrt{50}} = -0.74$$

Critical value:

$$z_{0.05} = -1.645$$

Since $z > z_{0.05}$ we fail to reject H_0 . There is not enough evidence at $\alpha = 0.05$ to conclude that $\mu < 40$.