

Suppose that we wish to test the hypothesis

$$H_0: \mu = 68 \text{ kilograms,}$$

$$H_1: \mu > 68 \text{ kilograms}$$

for the weights of male students at a certain college, using an $\alpha = 0.05$ level of significance, when it is known that $\sigma = 5$. Find the sample size required if the power of our test is to be 0.95 when the true mean is 69 kilograms.