Question:

Two different types of bulbs (A and B) were being tested to test the claim stating that Type B has a longer lifetime (in hours), on average, than that of Type A. A random sample of Type A and a random sample of Type B were tested; the following statistics were obtained from the two samples:

Type	Sample	Mean
	Size	
А	16	175
В	26	200

Assume that the lifespan of the two types are normally distributed with standard deviations of 7 and 9, respectively. Test the claim using α =0.05.

Solution:

Ho: $\mu_A = \mu_B$ $H_1: \mu_A < \mu_B$

Ho: $\mu_A - \mu_B = 0$ $H_1: \mu_A - \mu_B < 0$

α=0.05



Since Z=-10.06 \in R.R., we reject Ho at α =0.05 and accept H1: $\mu_A < \mu_B$. Therefore, we conclude that the Type B has a longer lifetime (in hours), on average, than that of Type A.