**Hypothesis test for the population mean: Z test**

A manufacturer claims that the mean lifetime, , of its light bulbs is months. The standard deviation of these lifetimes is months. Ninety bulbs are selected at random, and their mean lifetime is found to be months. Can we conclude, at the [level of significance](http://www.phoenix.aleks.com/alekscgi/x/Isl.exe/1xPugJ2N2Jda2fH88q19f7TRNLuq4lRRHTUac0pYuYLR2MaC3dxB30S1jSypJ4w3zDBBf5a9yVUgF0GTDyNRw-UNYxxJcUuxsQggd1JXQ53sn-VPPujq?1ybTGuBdTNWc47FqjjVdlxhY3GFRnla5ty_Wvzl1gisEZJirgQw9Fltz65KbToOYTJd6U-nIAUm2nVA38xGmBnul7GsT9acAdwm0OQ2BcufJXM92IekWq_q), that the mean lifetime of light bulbs made by this manufacturer differs from months?

Perform a [two-tailed test](http://www.phoenix.aleks.com/alekscgi/x/Isl.exe/1KN7t6rZq66LqIkajmBtEEG6iDWPVQY660XLFkcWkAV6qfH0gMNMgkyCDr9YzNgmSWIMEtHt2iXBlkRpxL16rJMZfKNlFspgRorB3hIJ1tUHMJj4HFRo?1epF1YLANn_1OW6kA54AVbN56hrT-oB6vesgZs7-H-9h5C4ehpMUZPhi2f8iuszJJn6_NcvvEqFNhmXkLcoR9YTNX1GWfKtc5TA3qBxSuFLqLGstN). Then fill in the table below.

Carry your intermediate computations to at least three decimal places, and round your responses as specified in the table.

The null hypothesis: Ho =

The alternative hypothesis: H1 =

The type of test statistic =

The value of the test statistic (round to at least 3 decimal places) =

The two critical values at the 0.05 level of significance (round to at least 3 decimal places) =

Can we conclude that the mean lifetime of the light bulbs made by this manufacturer differs from 44 months? \_\_\_\_\_\_\_