For an uniformly distributed population with range 1 we would like to test $H_1: \mu < 0$ against $H_0: \mu \ge 0$ at a significance level of 0.2. For this purpose we take a random sample os size 5 and use $\bar{X} - \mu$ (sample mean minus population mean) as our test statistic.

The (cumulative) distribution function (CDF) of $\overline{X} - \mu$ is graphed in the figure at be back of this page.

a. What is the decision rule?

b. If the sample mean is -0.05 what is the corresponding *p*-value?

c. If the population mean is 0.1, what is the probability of a Type I error?

