

tec 2. Assume that you have a box of resistors that have a Gaussian distribution of resistances with mean $\mu = 100 \Omega$ and standard deviation $\sigma = 20 \Omega$ (i.e., 20% resistors). Suppose that you wish to form a subgroup of resistors with $\mu = 100 \Omega$ and standard deviation 5Ω (i.e., 5% resistors) by selecting all resistors with resistance between the two limits $r_1 = \mu - a$ and $r_2 = \mu + a$. (Apparently, you are too cheap to just order the resistors with the appropriate resistance tolerance from Mouser.)

- (a) Find the value of a .
- (b) What fraction of resistors should satisfy the condition?
- (c) Find the standard deviation of the remaining sample.