



Example: A customer wishes to purchase a system from a vendor, specifying that it be tested to demonstrate a mean-time-between-failure of at least 200 hours with a confidence level of 95 percent.

In this case, $CL=95$, $X_1 = 0$, and $MTBF = 200$ for the minimum total test time. Enter chart at 95 percent on the CL axis. Move to the right to intersect curve $X_1 = 0$. Drop down to $TTT/MTBF$ and read 3.0. Solving $MTBF = 200$, $TTT = 3.0 \times 200$, or, the system must be operated at least 600 hours without any failure to meet specifications. Now, should a failure occur during the 600 hour test and we wish to try again, we would read over on the $X_1 = 1$ curve, then drop down to $TTT/MTBF = 4.8$, $TTT=960$ hours. With just one failure at any time during the test, specifications will have been met. Of course, this chart is not one-way. Simply establish any three values and crank out the fourth. A parting shot – note that for systems which are more cycle dependent than time-dependent, feel perfectly free to substitute mean-cycles-between-failure for mean-time-between-failure.

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