

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33

LOGARITHMIC BINOMIAL REDUNDANT RELIABILITY (LOGBIN.BAS)

ORIGINAL DATE: Circa 1986
REVISION DATE: November 8, 2020
AUTHOR: Phil Rutherford (www.philrutherford.com)
RUN DATE: 09-11-2020 (DD-MM-YYYY)
RUN TIME: 10:21:07
RUN WITH MMBASIC.EXE (www.mmbasic.com)

COMPUTES RELIABILITY OF OPERATING PARALLEL REDUNDANT UNITS
USING LOGARITHMIC BINOMIAL EXPANSION

MINIMUM NUMBER OF OPERATING UNITS REQUIRED ? 10
MAXIMUM NUMBER OF OPERATING REDUNDANT UNITS AVAILABLE ? 10
UNIT FAILURE RATE (/HR) ? 0.000001
MISSION TIME (HR) ? 87600

RELIABILITY IS 0.416445366 Pr(=> 10/ 10.S)
RELIABILITY IS 0.7657295287 Pr(=> 10/ 11.S)
RELIABILITY IS 0.9268543482 Pr(=> 10/ 12.S)
RELIABILITY IS 0.9809102722 Pr(=> 10/ 13.S)
RELIABILITY IS 0.9956451832 Pr(=> 10/ 14.S)
RELIABILITY IS 0.9991055841 Pr(=> 10/ 15.S)
RELIABILITY IS 0.9998311674 Pr(=> 10/ 16.S)
RELIABILITY IS 0.9999702683 Pr(=> 10/ 17.S)
RELIABILITY IS 0.9999950602 Pr(=> 10/ 18.S)
RELIABILITY IS 0.9999992189 Pr(=> 10/ 19.S)
RELIABILITY IS 0.9999998817 Pr(=> 10/ 20.S)

>