|  |  |  |  |
| --- | --- | --- | --- |
| **Parameters** | **Mersene Twister 50k** | **Mersene Twister 100k** | **Mersene Twister 150k** |
| Mean | 50 | 50 | 50 |
| stdev: | 28.9 | 28.9 | 28.9 |
| N | 50000 | 100000 | 150000 |
| Squart Root N | 223.6067977 | 316.227766 | 387.2983346 |
| df | 99 | 99 | 99 |
| critical value α =0.05 | 123.225 | 123.225 | 123.225 |
| SE of the mean (stdev/sqrt N) | 0.129244729 | 0.091389824 | 0.074619479 |
| Expected | 500 | 1000 | 1500 |
| **Chi Squared test statistic** | 371.396 | 558.912 | 834.0546667 |
| **Kolmogorov-Smirnov test** |  |  |  |
| Dn | 0.063239733 | 0.060789733 | 0.060799733 |
| Dnα (0.05) | 0.006082105 | 0.004300698 | 0.003511505 |
| **Skewness** | -3.626760554 | -5.234986579 | -5.747796672 |
| SE for Skewness | 0.010954123 | 0.007745851 | 0.006324492 |
| **Test Statistic** | -331.0863597 | -675.8439987 | -908.8155386 |
| p-value | 0 | 0 | 0 |
| lower | -3.64823024 | -5.250168167 | -5.760192449 |
| upper | -3.605290869 | -5.219804991 | -5.735400896 |
| **kurtosis** | 19.76860424 | 32.52968083 | 36.73700751 |
| S.E. For Kurtosis | 0.021907807 | 0.015491546 | 0.0126489 |
| Test Stat | 902.3543187 | 2099.834362 | 2904.363858 |
| p-value | 0 | 0 | 0 |
| lower | 19.72566573 | 32.49931796 | 36.71221612 |
| Upper | 19.81154276 | 32.56004371 | 36.7617989 |

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| --- | --- | --- | --- |
| **Parameters** | **Knuth B 50k** | **Knuth B 100k** | **Knuth B 150k** |
| Mean | 50.1 | 49.9 | 50 |
| stdev: | 28.9 | 28.8 | 28.9 |
| N | 50000 | 100000 | 150000 |
| Squart Root N | 223.6067977 | 316.227766 | 387.2983346 |
| df | 99 | 99 | 99 |
| critical value α =0.05 | 123.225 | 123.225 | 123.225 |
| SE of the mean (stdev/sqrt N) | 0.129244729 | 0.091073597 | 0.074619479 |
| Expected | 500 | 1000 | 1500 |
| **Chi Squared test statistic** | 324.688 | 590.836 | 800.3973333 |
| **Kolmogorov-Smirnov test** | |  |  |
| Dn | 0.060194159 | 0.061633642 | 0.062604415 |
| Dnα (0.05) | 0.006082105 | 0.004300698 | 0.003511505 |
| **Skewness** | -4.34376454 | -5.281522865 | -5.630624222 |
| SE for Skewness | 0.010954123 | 0.007745851 | 0.006324492 |
| Test Statistic | -396.5415327 | -681.8518974 | -890.2887623 |
| p-value | 0 | 0 | 0 |
| lower | -4.365234226 | -5.296704453 | -5.643019999 |
| upper | -4.322294854 | -5.266341277 | -5.618228446 |
| **kurtosis** | 26.04268783 | 32.72838075 | 35.71932025 |
| S.E. For Kurtosis | 0.021907807 | 0.015491546 | 0.0126489 |
| Test Stat | 1188.740062 | 2112.660707 | 2823.907275 |
| p-value | 0 | 0 | 0 |
| lower | 25.99974932 | 32.69801788 | 35.69452886 |
| Upper | 26.08562634 | 32.75874363 | 35.74411163 |

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| --- | --- | --- | --- |
| **Parameters** | **Minimal Std Rand 50k** | **Minimal Std Rand 100k** | **Minimal Std Rand 150k** |
| Mean | 50 | 50.1 | 50 |
| stdev: | 28.9 | 28.9 | 28.9 |
| N | 50000 | 100000 | 150000 |
| Squart Root N | 223.6067977 | 316.227766 | 387.2983346 |
| df | 99 | 99 | 99 |
| critical value α =0.05 | 123.225 | 123.225 | 123.225 |
| SE of the mean (stdev/sqrt N) | 0.129244729 | 0.091389824 | 0.074619479 |
| Expected | 500 | 1000 | 1500 |
| **Chi Squared test statistic** | 347.288 | 611.834 | 834.0546667 |
| **Kolmogorov-Smirnov test** |  |  |  |
| Dn | 0.061939733 | 0.062926649 | 0.060799733 |
| Dnα (0.05) | 0.006082105 | 0.004300698 | 0.003511505 |
| **Skewness** | -4.072544985 | -5.224288613 | -5.747796672 |
| SE for Skewness | 0.010954123 | 0.007745851 | 0.006324492 |
| Test Statistic | -371.7819452 | -674.4628764 | -908.8155386 |
| p-value | 0 | 0 | 0 |
| lower | -4.09401467 | -5.239470201 | -5.760192449 |
| upper | -4.051075299 | -5.209107025 | -5.735400896 |
| **kurtosis** | 23.54373802 | 32.28954249 | 36.73700751 |
| S.E. For Kurtosis | 0.021907807 | 0.015491546 | 0.0126489 |
| Test Stat | 1074.673427 | 2084.333111 | 2904.363858 |
| p-value | 0 | 0 | 0 |
| lower | 23.5007995 | 32.25917962 | 36.71221612 |
| Upper | 23.58667653 | 32.31990536 | 36.7617989 |

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| **Parameters** | **Ranlux 50k** | **Ranlux 100k** | **Ranlux 150k** |
| Mean | 49.9 | 50 | 50.1 |
| stdev: | 28.9 | 28.9 | 28.9 |
| N | 50000 | 100000 | 150000 |
| Squart Root N | 223.6067977 | 316.227766 | 387.2983346 |
| df | 99 | 99 | 99 |
| critical value α =0.05 | 123.225 | 123.225 | 123.225 |
| SE of the mean (stdev/sqrt N) | 0.129244729 | 0.091389824 | 0.074619479 |
| Expected | 500 | 1000 | 1500 |
| **Chi Squared test statistic** | 370.296 | 637.674 | 851.2773333 |
| **Kolmogorov-Smirnov test** |  |  |  |
| Dn | 0.06427263 | 0.062057748 | 0.061369982 |
| Dnα (0.05) | 0.006082105 | 0.004300698 | 0.003511505 |
| **Skewness** | **-3.955106072** | **-5.336954408** | **-5.06727356** |
| SE for Skewness | 0.010954123 | 0.007745851 | 0.006324492 |
| Test Statistic | -361.0609667 | -689.0081862 | -801.2143108 |
| p-value | 0 | 0 | 0 |
| lower | -3.976575757 | -5.352135996 | -5.079669336 |
| upper | -3.933636386 | -5.32177282 | -5.054877783 |
| **kurtosis** | **21.89860612** | **33.23643001** | **31.13176294** |
| S.E. For Kurtosis | 0.021907807 | 0.015491546 | 0.0126489 |
| Test Stat | 999.5800191 | 2145.455965 | 2461.222981 |
| p-value | 0 | 0 | 0 |
| lower | 21.85566761 | 33.20606714 | 31.10697155 |
| Upper | 21.94154463 | 33.26679288 | 31.15655433 |

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| --- | --- | --- | --- |
| **Parameters** | **Quasi 50k** | **Quasi 100k** | **Quasi 150k** |
| Mean | 50 | 50 | 50 |
| stdev: | 28.9 | 28.9 | 28.9 |
| N | 50000 | 100000 | 150000 |
| Squart Root N | 223.6068 | 316.227766 | 387.298335 |
| df | 99 | 99 | 99 |
| critical value α =0.05 | 123.225 | 123.225 | 123.225 |
| SE of the mean (stdev/sqrt N) | 0.1292447 | 0.09138982 | 0.07461948 |
| Expected | 500 | 1000 | 1500 |
| **Chi Squared test statistic** | 250.18 | 500.09 | 750.028 |
| **Kolmogorov-Smirnov test** |  |  |  |
| Dn | 0.0619397 | 0.06194973 | 0.06193973 |
| Dnα (0.05) | 0.0060821 | 0.0043007 | 0.0035115 |
| **Skewness** | -6.9901913 | -6.99593189 | -6.99747342 |
| SE for Skewness | 0.0109541 | 0.00774585 | 0.00632449 |
| Test Statistic | -638.13338 | -903.184471 | -1106.40876 |
| p-value | 0 | 0 | 0 |
| lower | -7.011661 | -7.01111348 | -7.0098692 |
| upper | -6.9687216 | -6.9807503 | -6.98507764 |
| **kurtosis** | 47.848902 | 47.9011472 | 47.9152651 |
| S.E. For Kurtosis | 0.0219078 | 0.01549155 | 0.0126489 |
| Test Stat | 2184.1028 | 3092.08305 | 3788.09744 |
| p-value | 0 | 0 | 0 |
| lower | 47.805963 | 47.8707843 | 47.8904737 |
| Upper | 47.89184 | 47.9315101 | 47.9400565 |