calculatoratoz.com

unitsconverters.com

Risk, Reliability and Log-Pearson Distribution Formulas

Calculators! Examples! Conversions!

Bookmark **calculatoratoz.com**, **unitsconverters.com**

Widest Coverage of Calculators and Growing - **30,000+ Calculators!**
Calculate With a Different Unit for Each Variable - **In built Unit Conversion!**
Widest Collection of Measurements and Units - **250+ Measurements!**

Feel free to SHARE this document with your friends!

Please leave your feedback here...

List of 19 Risk, Reliability and Log-Pearson Distribution Formulas

Risk, Reliability and Log-Pearson Distribution

Log-Pearson Type III Distribution

1) Adjusted Coefficient of Skew

Open Calculator

fx $$C'_s = C_s \cdot \left(\frac{1 + 8.5}{N}\right)$$

ex $$0.004349 = 1.2 \cdot \left(\frac{1 + 8.5}{2621}\right)$$

2) Coefficient of Skew of Variate Z given Adjusted Coefficient of Skew

Open Calculator

fx $$C_s = \frac{C'_s}{\frac{1+8.5}{N}}$$

ex $$1.200142 = \frac{0.00435}{\frac{1+8.5}{2621}}$$

3) Equation for Base Series of Z Variates

Open Calculator

fx $z_m = \log 10(z)$

ex $0.78533 = \log 10(6.1)$

4) Equation for Z Series for any Recurrence Interval

Open Calculator

fx $Z_t = z_m + K_z \cdot \sigma$

ex $9.52 = 0.77 + 7 \cdot 1.25$

5) Frequency Factor given Z Series for Recurrence Interval

Open Calculator

fx $K_z = \frac{Z_t - z_m}{\sigma}$

ex $6.984 = \frac{9.5 - 0.77}{1.25}$

6) Mean Series of Z Variates given Z Series for Recurrence Interval

Open Calculator

fx $z_m = Z_t - K_z \cdot \sigma$

ex $0.75 = 9.5 - 7 \cdot 1.25$

7) Partial Duration Series

Open Calculator

$$T_P = \frac{1}{(\ln(T_A)) - (\ln(T_A - 1))}$$

$$19.49573 = \frac{1}{(\ln(20)) - (\ln(20 - 1))}$$

8) Sample Size given Adjusted Coefficient of Skew

Open Calculator

$$N = C_s \cdot \frac{1 + 8.5}{C'_s}$$

$$2620.69 = 1.2 \cdot \frac{1 + 8.5}{0.00435}$$

Risk, Reliability and Safety Factor

9) Actual Value of Parameter Adopted in Design of Project given Safety Factor

Open Calculator

$$C_{am} = SF_m \cdot C_{hm}$$

$$6 = 3 \cdot 2$$

10) Equation for Risk

Open Calculator

$$R = 1 - (1 - p)^n$$

$$0.064705 = 1 - (1 - 0.006667)^{10}$$

11) Equation for Risk given Return Period

Open Calculator

fx $$R = 1 - \left(1 - \left(\frac{1}{T_r}\right)\right)^n$$

ex $$0.064702 = 1 - \left(1 - \left(\frac{1}{150}\right)\right)^{10}$$

12) Equation for Safety Factor

Open Calculator

fx $$SF_m = \frac{C_{am}}{C_{hm}}$$

ex $$3 = \frac{6}{2}$$

13) Equation for Safety Margin

Open Calculator

fx $$S_m = C_{am} - C_{hm}$$

ex $$4 = 6 - 2$$

14) Probability given Return Period

Open Calculator

fx $$p = \frac{1}{T_r}$$

ex $$0.006667 = \frac{1}{150}$$

15) Reliability given Risk

Open Calculator

fx $R_e = 1 - R$

ex $0.935295 = 1 - 0.064705$

16) Reliability using Return Period

Open Calculator

fx $R_e = \left(1 - \left(\frac{1}{T_r}\right)\right)^n$

ex $0.935298 = \left(1 - \left(\frac{1}{150}\right)\right)^{10}$

17) Return Period given Probability

Open Calculator

fx $T_r = \frac{1}{p}$

ex $149.9925 = \frac{1}{0.006667}$

18) Risk given Reliability

Open Calculator

fx $R = 1 - R_e$

ex $0.1 = 1 - 0.9$

19) Value of Parameter obtained from Hydrological Considerations given Safety Factor

Open Calculator

fx $$C_{hm} = \frac{C_{am}}{SF_m}$$

ex $$2 = \frac{6}{3}$$

Variables Used

- C_{am} Actual Value of the Parameter
- C_{hm} Value of Parameter
- C_s Coefficient of Skew of Variate Z
- C'_s Adjusted Coefficient of Skew
- K_z Frequency Factor
- n Successive Years
- N Sample Size
- p Probability
- R Risk
- R_e Reliability
- S_m Safety Margin
- SF_m Safety Factor
- T_A Annual Series
- T_P Partial Duration Series
- T_r Return Period
- z Variate 'z' of a Random Hydrologic Cycle
- z_m Mean of Z Variates
- Z_t Z Series for any Recurrence Interval
- σ Standard Deviation of the Z Variate Sample

Constants, Functions, Measurements used

- Function: **ln**, ln(Number)
  Natural logarithm function (base e)
- Function: **log10**, log10(Number)
  Common logarithm function (base 10)

Check other formula lists

- **Empirical Formulae for Flood-Peak Area Relationships Formulas**
- **Gumbel's Method for Prediction of Flood's Peak Formulas**
- **Rational Method to Estimate the Flood Peak Formulas**
- **Risk, Reliability and Log-Pearson Distribution Formulas**

Feel free to SHARE this document with your friends!

PDF Available in

English Spanish French German Russian Italian Portuguese Polish Dutch

2/21/2024 | 6:23:49 AM UTC

Please leave your feedback here...