

F-83 Scripting Manual

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1 Decimal to Binary

$$\frac{0}{y} + 10^x \left(y - 2\text{Rnd} \left(\frac{y}{2} - 0.5 \right) \right) + \quad (1)$$

$$0\text{Pol} \left[(x+1) * \cos \left(\text{Rnd} \left(\frac{y}{2} - 0.5 \right) \right), (x+1) * \sin \left(\text{Rnd} \left(\frac{y}{2} - 0.5 \right) \right) \right] M + \quad (2)$$

Variable	Start	End
x	0	?
y	10	0
M	0	1010

2 Binary to Decimal

$$\frac{0}{x - \text{Rnd}(\log(A) + 0.5)} + 2^x \left[\text{Rnd} \left(\frac{A}{10^x} - 0.5 \right) - 10 \text{Rnd} \left(\frac{A}{10^{x+1}} - 0.5 \right) \right] + 0\text{Rec}(x+1, 0) M +$$

Variable	Start	End
x	0	?
A	1011	0
M	0	11

3 Sum

$$\sum_{x=a}^n f(x) = f(x) + \frac{0\text{Rec}(x+1, 0)}{x-n-2} M +$$

Variable	Start	End
x	a	n
M	0	Σ

4 Sequences

$$T_n = A \cdot r^n \quad (3)$$

$$r = \frac{T_y}{T_x}^{(y-x)^{-1}} \quad (4)$$

$$A = \frac{T_x}{r^x} \quad (5)$$

$$S_n = \frac{Ar(1 - r^n)}{1 - r} \quad (6)$$

Where A is the starting value i.e. T_0 and r is the common ratio.

In 2009, the population was 2,000. By 2013, the population was 32,000.
Find the general formula.

5 Financial Maths

Mortgage

$$A = P \cdot \frac{i}{1 - (1 + i)^{-t}} \quad (7)$$

Investment

$$A = -P \cdot \frac{i}{1 - (1 - i)^{-t}} \quad (8)$$

Where:

A is the monthly payment

P is the Principle

i is the monthly interest rate

t is the time period in months

Note the two swapped signs in the Investment formula.

To get Principle from monthly payment, simply swap A & P, and invert the fraction.