F-83 Scripting Manual

Fred Sheppard

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1 Decimal to Binary

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

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

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

2 Binary to Decimal

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

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

3 Sum

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

Variable	Start	End
x	a	n
M	0	Σ

4 Sequences

$$Tn = A \cdot r^n \tag{3}$$

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

$$A = \frac{T_x}{r^x} \tag{5}$$

$$Sn = \frac{A \cdot r\left(1 - r^n\right)}{1 - r} \tag{6}$$

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

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

$$r = \frac{32,000}{2000}^{(2013-2009)^{-1}} = 2 \tag{7}$$

$$A = \frac{32000}{2^{(2013-2009)}} = 2000 \tag{8}$$