Larry Breed's Experiment

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The following BASIC program is simple enough that it can be transcribed easily to Fortran or any other language. When it or its equivalent is run on various machines, strange numbers u and v turn up for the larger values of n. Can you explain them?

The program:

```
10  DEFINT N :  DEFDBL T-V   ' ...  double precision variables.
20  T = 1                    ' ...  T = 2.0^N .
30  FOR N=0 TO 32766         ' ...  N = 0, 1, 2, 3, ... in turn.
40    U = T-1  :   U = T-U   ' ...  U = T - (T-1)    ?
50    V = T-17 :   V = T-V   ' ...  V = T - (T-17)   ?
60    PRINT "n: ";N;"   u = ";U;"   v = ";V
70    T = T+T                ' ...  T = 2.0^(N+1)    ?
80    NEXT N
90  END
```

Some results:

	IBM PC BASICA		IBM PC TurboBasic		IBM 370 Fortran		HP-71B BASIC	
n	u	v	u	v	u	v	u	v
0	1	17	1	17	1	17	1	17
...	1	17	1	17	1	17	1	17
39	1	17	1	17	1	17	1	17
40	1	17	1	17	1	17	0	20
...	1	17	1	17	1	17	0	20
43	1	17	1	17	1	17	0	20
44	1	17	1	17	1	17	0	0
...	1	17	1	17	1	17	0	0
53	1	17	1	17	1	17	0	0
54	1	17	0	16	1	17	0	0
55	1	17	0	16	1	17	0	0
56	1	17	0	16	1	17	0	0
57	0	16	0	16	16	32	0	0
58	0	16	0	32	16	32	0	0
59	0	16	0	0	16	32	0	0
60	0	16	0	0	0	16	0	0
61	0	0	0	0	0	256	0	0
62	0	0	0	0	0	256	0	0
63	0	0	0	0	0	256	0	0
64	0	0	0	0	0	0	0	0
...	0	0	0	0	0	0	0	0
127	Overflow		0	0	0	0	0	0
...			0	0	0	0	0	0
252			0	0	Overflow		0	0
...			0	0			0	0
1024			Overflow				0	0
...							0	0
1661							Overflow	