Program for $N \leftarrow b^L$

	ADDRESS	CONTENTS	EXPLANATION	
START →	30	1	Constant (load with program)	
	31	73 02 30 30	$N \leftarrow \underline{1}$	
	32	28 03 28 00	INPUT b	INPUT L
	33	20 03 21 01	$J \leftarrow b$	
	34	20 00 17 10	$(R_0 R_1) \leftarrow L$	Right shift R_1 by (R_0)
	35	03 00 21 04	$R_0 \leftarrow 0$	$P \leftarrow [L]$
	36	71 07 00 04	$Q \leftarrow L - P$	
(A)	37	20 04 05 10	* Branch to B if $P = 0$	
	38	25 42 00 00		
	39	01 11 21 04	$P \leftarrow P - 1$	
	40	72 02 02 03	$N \leftarrow N \times b$	
	41	24 37 00 00	Branch to A	
(B)	42	74 01 01 30	$J \leftarrow \sqrt{J}$	
	43	20 01 01 11	* Branch to C if $J = 1$	
	44	05 10 25 51		
	45	70 07 07 07	$Q \leftarrow Q + Q$	
	46	71 29 07 30	Branch to B if $Q - \underline{1} < 0$	
	47	74 29 29 42		
	48	71 07 07 30	$Q \leftarrow Q - 1$	
	49	72 02 02 01	$N \leftarrow N \times J$	
	50	24 42 00 00	Branch to B	
(C)	51	79 03 00 02	DISPLAY b, L, N	
	52	24 31 00 00	Branch to START	

* These branches use register tests on the contents of R_0 and R_1

Both of the above programs use the square root subroutine

74 cd ef gh

⇒ "if (ef) ≥ 0 then $(cd) \leftarrow \sqrt{(ef)}$ else go to gh"