

UNIVERSITY OF ILLINOIS
DIGITAL COMPUTER

LIBRARY ROUTINE P 13 - 204

TITLE Combined Integer Print (DOI or SADOI)
 TYPE Closed with one program parameter
 TEMPORARY STORAGE 0, 1, 2
 NUMBER OF WORDS 35
 PARAMETERS This routine at location p is called into use by the orders

	xy nF
q	50 qF
q + 1	26 pF

DESCRIPTION The function digits have the following logic when $1 \leq n \leq 12$

x = 5	a sign is punched
x = J	a sign is not punched
Y = 0	zeros on the left are replaced by spaces
Y = 2	zeros on the left are punched.

The routine prints an integer mod. 10^n . For example, if the integer in A is actually + 590643 and the value of n is 4, then the following print outs will occur

50:	+ 643
52:	+0643
J0:	643
J2:	0643

Thus the routine will never hang up when the argument n is less than the number of digits in the integer.

RESULTS WHEN n = 0.

An additional feature is provided by the argument n = 0. In this case under the entry 50, J0 a twelve place integer will be punched. The suppressed zeros however will not be replaced by spaces, thus greatly decreasing the output time. For example, if the numbers +3, + 567, - 8912 and -541231621527 were to be punched the format under the n = 0 entry is depicted on the next page.

50	OF	J0	OF
+3		3	
+567		567	
-8912		8912	
-541231621527		541231621527	

The entries 52 OF and J2 OF are equivalent to the entries 52 12F and J2 12F.

The routine under the entry $n = 12$ will punch correctly $2^{-39} - 1$ and -2^{39} , which are respectively the greatest positive and greatest negative integer capable of being placed in one location.

NOTE The routine does not punch a space after the word.

RT: 10/10/60

DATE	January 9, 1956
PROGRAMMED BY	W. Scott Bartky
APPROVED BY	J. P. Nash

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LOCATION	ORDER		NOTES	PAGE 1
0	00 K(Pl3) 40 F		Store n	
	41 2F			
1	S5 F L4 33L		link	
2	42 26L 46 2F		n to 2F	
3	36 7L 40 1F			
4	L5 F 36 6L		print sign if	
5	92 708F 22 6L		desired	
6	92 644F L5 1F			
7	00 6F 32 8L			
8	43 33L L1 2F			
9	36 27L L4 29L			
10	40 1F 50 34L			
11	L5 12L 76 F			
12	10 36F 40 F		form first digit	
13	L5 1F L0 32L		to be printed	
14	36 16L 46 1F		in 0	
15	75 31L 22 12L			
16	L5 2F L0 32L			

LOCATION	ORDER	NOTES	PAGE 2	P13
17	36 23L L4 33L	test for last digit		
18	40 2F L5 F	test for non-		
19	L0 33L 36 29L	significant zero		
20	L5 F 00 36F	Print digit		
21	82 4F 10 40F	block non- significant		
22	43 33L 26 15L	zero test		
23	L5 F 00 36F			
24	82 4F L5 32L	print last		
25	42 19L L5 3L	digit reset program		
26	42 33L 22 F			
27	L5 22L 42 19L	n = 0 special case set		
28	L5 29L 22 2L			
29	00 12F 92 961F	punch space		
30	10 11F 26 15L			
31	00 F 00 10F			
32	80 1F 00 29L	constants		
33	80 F 00 (1)F			
34	57 3935F L8 1510F			