

**Formatted Printing: printf**

Do NOT write on this test. Record all answers on the bubble sheet. **Closed book. No notes.** Work strictly from memory. **No calculators. No time limit. Scratch paper okay.**

On the following printf questions you are given a list of inputs. For each problem line determine which printf statement created the accompanying outputs. (   means space.)

Which of these printf statements created the outputs shown for each problem below? (x is int x;)

- (A) printf("uuuu%2d",x); (D) printf("u%05d",x); (G) printf("%+7d",x);  
 (B) printf("uuu%0+3d",x); (E) printf("%-7d",x); (H) printf("%03duuu",x);  
 (C) printf("uuu%02d",x); (F) printf("%\_07d",x); (I) printf("%07d",x);

inputs:	<u>0</u>	<u>-1</u>	<u>1464511125</u>	<u>-1978756331</u>
1/1p.	uuuuu+0	uuuuu-1	+1464511125	-1978756331
2/1p.	u000000	-000001	u1464511125	-1978756331
3/1p.	uuu00u	uuu-1uu	uuu1464511125uu	uuu-1978756331uu
4/1p.	uuu+00u	uuu-01u	uuu+1464511125u	uuu-1978756331u
5/1p.	000uuuu	-01uuuu	1464511125uuuu	-1978756331uuuu
6/1p.	u0uuuuu	-1uuuuu	u1464511125	-1978756331
7/1p.	uuuuu0u	uuuu-1u	uuuu1464511125u	uuuu-1978756331u
8/1p.	uu00000	uu-0001	uu1464511125	uu-1978756331

Which of these printf statements created the outputs shown for each problem below? (x is int x;)

- (A) printf("uuu%-3duuu",x); (D) printf("u%7d",x); (G) printf("%-8d",x);  
 (B) printf("uuu%2duuu",x); (E) printf("u%-u7d",x); (H) printf("%+9d",x);  
 (C) printf("uu%+7d",x); (F) printf("u%-u8d",x); (I) printf("%5duuu",x);

inputs:	<u>8</u>	<u>-3</u>	<u>1428866829</u>	<u>-1585341960</u>
9/1p.	uuuu8uuuu	uuu-3uuuu	uuu1428866829uuuu	uuu-1585341960uuuu
10/1p.	uu8uuuuuu	u-3uuuuuu	uu1428866829u	u-1585341960u
11/1p.	uu8uuuuuu	u-3uuuuuu	uu1428866829	u-1585341960
12/1p.	uuuuuuu+8	uuuuuuu-3	uu+1428866829	uu-1585341960
13/1p.	uuuuuuu8u	uuuuuuu-3u	uu1428866829u	u-1585341960u
14/1p.	uuuuuuu+8	uuuuuuu-3	+1428866829	-1585341960
15/1p.	u8uuuuuuu	u-3uuuuuu	u1428866829	u-1585341960
16/1p.	uuuu8uuuu	uuu-3uuuu	1428866829uuuu	-1585341960uuuu

Which of these printf statements created the outputs shown for each problem below? (x is int x;)

- (A) printf("uuu%-4d",x); (D) printf("u%6d",x); (G) printf("%7d",x);  
 (B) printf("uuu%0+3d",x); (E) printf("u%+-3d",x); (H) printf("%+6d",x);  
 (C) printf("u%\_5d",x); (F) printf("u%2duuu",x); (I) printf("%0+6d",x);

inputs:	<u>4</u>	<u>-4</u>	<u>1175256232</u>	<u>-1613102406</u>
17/1p.	uuuuuu4	uuuuu-4	uu1175256232	u-1613102406
18/1p.	uuuuuu4	uuuuu-4	u1175256232	-1613102406
19/1p.	u+4uuuu	u-4uuuu	u+1175256232uu	u-1613102406uu
20/1p.	+00004u	-00004u	+1175256232u	-1613102406u
21/1p.	uu4uuuu	u-4uuuu	u1175256232uuuu	u-1613102406uuuu
22/1p.	uuuu+4u	uuuu-4u	+1175256232u	-1613102406u
23/1p.	uuu4uuu	uuu-4uu	uuu1175256232	uuu-1613102406
24/1p.	uu+04uu	uu-04uu	uu+1175256232uu	uu-1613102406uu

Which of these printf statements created the outputs shown for each problem below? (x is char \* x;)

- (A) printf("\_\_\_\_%-3s",x); (D) printf("\_%-6s",x); (G) printf("%4s\_\_\_\_",x);  
 (B) printf("\_\_\_\_%1s\_\_\_\_",x); (E) printf("\_%3s\_\_\_\_",x); (H) printf("%6s\_",x);  
 (C) printf("\_\_\_\_%2s\_\_\_\_",x); (F) printf("%-7s",x); (I) printf("%7s",x);

	<u>""</u>	<u>"g"</u>	<u>"ck"</u>	<u>"zwdd"</u>	<u>"zdzczwz"</u>	<u>"jyqhyqgk"</u>
25/1p.	____	____g____	__ck____	zwdd____	zdzczwz____	jyqhyqgk____
26/1p.	____	g____	ck____	zwdd__	zdzczwz	__jyqhyqgk
27/1p.	____	____g__	____ck_	____zwdd	____zdzczwz	____jyqhyqgk
28/1p.	____	____g	____ck	____zwdd	zdzczwz	jyqhyqgk
29/1p.	____	____g____	__ck____	zwdd____	zdzczwz____	__jyqhyqgk____
30/1p.	____	____g_	____ck_	zwdd__	zdzczwz_	jyqhyqgk_

Which of these printf statements created the outputs shown for each problem below? (x is char \* x;)

- (A) printf("\_\_\_\_%1s\_\_\_\_",x); (D) printf("\_%-3s\_\_\_\_",x); (G) printf("%-7s",x);  
 (B) printf("\_\_\_\_%-2s\_\_\_\_",x); (E) printf("\_%-5s\_",x); (H) printf("%6s\_",x);  
 (C) printf("\_\_\_\_%s\_\_\_\_",x); (F) printf("%-6s\_",x); (I) printf("%7s",x);

	<u>""</u>	<u>"l"</u>	<u>"yx"</u>	<u>"xbhq"</u>	<u>"lclbkl"</u>	<u>"bhyjbgyl"</u>
31/1p.	____	____l_	____yx_	__xbhq_	lclbkl_	bhyjbgyl_
32/1p.	____	l____	yx____	xbhq__	lclbkl_	__bhyjbgyl_
33/1p.	____	l____	yx____	xbhq__	lclbkl_	bhyjbgyl
34/1p.	____	__l____	__yx____	__xbhq____	__lclbkl____	__bhyjbgyl____
35/1p.	____	__l____	__yx____	__xbhq____	__lclbkl____	__bhyjbgyl____

Which of these printf statements created the outputs shown for each problem below? (x is double x;)

- (A) printf("\_%11f\_",x); (D) printf("\_%0+13f",x); (G) printf("%+14.4f",x);  
 (B) printf("\_%0+10.0f\_\_\_\_",x); (E) printf("\_%11.0f\_\_\_\_",x); (H) printf("%013.2f\_",x);  
 (C) printf("\_%0+10.4f\_\_\_\_",x); (F) printf("\_%13f",x); (I) printf("%13.6f\_",x);

	<u>3</u>	<u>-1.33</u>	<u>-2.3299</u>	<u>-60618.270370</u>
36/1p.	____3__	____-1__	____-2__	____-60618__
37/1p.	____3.000000_	____-1.330000_	____-2.329900_	____-60618.270370_
38/1p.	__+00003.000000	__-00001.330000	__-00002.329900	__-60618.270370
39/1p.	____3.000000	____-1.330000	____-2.329900	__-60618.270370
40/1p.	__+0003.0000____	__-0001.3300____	__-0002.3299____	__-60618.2704____
41/1p.	000000003.00_	-000000001.33_	-000000002.33_	-000060618.27_

Which of these printf statements created the outputs shown for each problem below? (x is double x;)

- (A) printf("\_\_\_\_%+10f\_",x); (D) printf("\_%+12f",x); (G) printf("\_%0+13.4f",x);  
 (B) printf("\_\_\_\_%10.0f\_",x); (E) printf("\_%10.2f\_\_\_\_",x); (H) printf("%+011.0f\_\_\_\_",x);  
 (C) printf("\_\_\_\_%+11.6f\_",x); (F) printf("\_%12.2f",x); (I) printf("%+13.0f\_",x);

	<u>4</u>	<u>-5.72</u>	<u>2.3309</u>	<u>-116817.131128</u>
42/1p.	__+0000004.0000	__-0000005.7200	__+0000002.3309	__-0116817.1311
43/1p.	____4.00	____-5.72	____2.33	____-116817.13
44/1p.	____4.00__	____-5.72__	____2.33__	__-116817.13__
45/1p.	____+4.000000	____-5.720000	____+2.330900	__-116817.131128
46/1p.	____4__	____-6__	____2__	____-116817__
47/1p.	____+4.000000_	____-5.720000_	____+2.330900_	__-116817.131128_

Total points 47.

**Answer Key** (points per line)

1 (1).	G	25 (1).	G
2 (1).	F	26 (1).	D
3 (1).	C	27 (1).	A
4 (1).	B	28 (1).	I
5 (1).	H	29 (1).	E
6 (1).	E	30 (1).	H
7 (1).	A	31 (1).	H
8 (1).	D	32 (1).	E
9 (1).	B	33 (1).	G
10 (1).	E	34 (1).	C
11 (1).	F	35 (1).	B
12 (1).	C	36 (1).	E
13 (1).	D	37 (1).	I
14 (1).	H	38 (1).	D
15 (1).	G	39 (1).	F
16 (1).	I	40 (1).	C
17 (1).	D	41 (1).	H
18 (1).	G	42 (1).	G
19 (1).	E	43 (1).	F
20 (1).	I	44 (1).	E
21 (1).	F	45 (1).	D
22 (1).	H	46 (1).	B
23 (1).	A	47 (1).	C
24 (1).	B		

Total points 47.