

CS2123 Data Structures

Trace the following program, show how variables change in the memory, and give the output.

```
#include <stdio.h>
main()
{
    int x, y, z, *p1, **p2;
    int ***p3;

    p1 = &x;
    *p1 = 5;
    printf("%d ", x);
    printf("%p %d %p \n",
        p1, *p1, &p2);

    p2 = &p1;
    **p2 = 8;
    printf("%d ", x);

    p3 = &p2;
    ***p3 = 12;
    printf("%d ", x);

    p1 = &y;
    ***p3 = 9;
    printf("%d \n", y);

    printf("%p %p %d %p \n",
        p2, *p2, **p2, &p2);
}
```

MEMORY

name	Add ress	Content/Value
x	12	
y	16	
z	20	
	24	
p1	28	
p2	32	
p3	36	
	...	
	100	
	104	
	108	
	112	
	116	
	120	
	124	
	128	

OUTPUT: