3) (5 pts) ALG (Stack)

Consider the following C code that represents a stack that holds a list of values. Show the contents of the stack **right after** each indicated point commented (A, B, and C), under the assumption that the `followStack` function is called with a pointer to a `stack_t` that is empty.

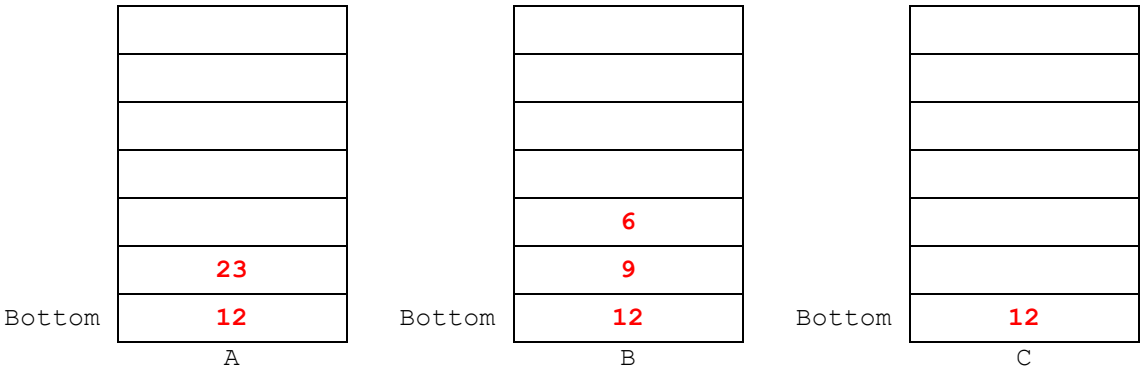
```
typedef struct node_s{
      int data;
      struct node_s * next;
}node_t;

typedef struct{
      node_t * top;
}stack_t;

void push(stack_t * s, int data);
int pop(stack_t * s);

void followStack(stack_t * myStack){

      int x;
      push(myStack, 12);
      push(myStack, 5);
      push(myStack, -8);
      x = pop(myStack);
      x = pop(myStack);
      push(myStack, 23); //A
      x = pop(myStack);
      push(myStack, 17);
      push(myStack, -3);
      x = pop(myStack);
      x = pop(myStack);
      push(myStack, 9);
      push(myStack, 6); //B
      push(myStack, -14);
      x = pop(myStack);
      x = pop(myStack);
      x = pop(myStack);
      push(myStack, 34);
      x = pop(myStack); //C
}
```



Grading: 1 pt first stack, 2 pts second stack, 2 pts last stack, can only award partial credit for stacks B and C (1 pt if it's close).

Computer Science Foundation Exam

January 11, 2025

Section B

ADVANCED DATA STRUCTURES

NO books, notes, or calculators may be used,
and you must work entirely on your own.

SOLUTION

Question #	Max Pts	Category	Score
1	10	DSN	
2	10	DSN	
3	5	ALG	
TOTAL	25		

You must do all 3 problems in this section of the exam.

Problems will be graded based on the completeness of the solution steps and <u>not</u> graded based on the answer alone. Credit cannot be given unless all work is shown and is readable. Be complete, yet concise, and above all <u>be neat</u>. For each coding question, assume that all of the necessary includes (stdlib, stdio, math, string) for that particular question have been made.