Assignment 2 on Stacks (Please write precise and short answers):

Q5. Suppose you have an array of size 5 and you use it to implement a stack. Perform the following operations on the stack, report the status of the stack after every iteration. Write down the exceptions thrown, if any, in each of the following sequences of operations starting from an empty stack each time.
1. Push 4, Push 9, Pop, Push 2, Push 2, Pop, Push 10, Push 8, Pop
2. Push 4, Push 9, Pop, Push 2, Pop,Pop, Pop Push 10, Push 8, Pop
3. Top, Push 8, Push 3, Pop, Top, Push 7, Push 9, Pop, Top
4. Push 3, Pop, Pop, Push 5 Pop, Pop, Push 3, Pop, Pop, Push 2, Pop, Top
5. Pop

Q6. Suppose you use the tight strategy to implement stack with c=3. Perform the following operations. What is the average number of operations performed?

PUSH 3, PUSH 2, PUSH 4, PUSH 1, POP, PUSH 0, PUSH 2, PUSH 9, PUSH 6, POP, PUSH 8, POP, POP, PUSH 12, PUSH 15, PUSH 7, PUSH 5, PUSH 100, PUSH 110

Q7. Suppose you use the growth strategy to implement stack. Perform the following operations. What is the average number of operations performed?

PUSH 3, PUSH 2, PUSH 4, PUSH 1, POP, PUSH 0, PUSH 2, PUSH 9, PUSH 6, POP, PUSH 8, POP, POP, PUSH 12, PUSH 15, PUSH 7, PUSH 5, PUSH 100, PUSH 110