1. Assume that x, y, z are integer variables and that s is a stack of integers, state the

output of each program fragment.

x = 3;y = 5;z = 2;

s.makeEmpty( );

s.push(x);s.push(4);s.pop();

s.push(y);s.push(3); s.push(z);

s.pop();s.push(2);s.push(x);

while(! s.isEmpty( )) System.out.println(s.pop() + " ");

1. The output of the first program fragment would be:

3 2 5

2. x = 3; y = 1;

s.makeEmpty();

s.push(5);s.push(7);s.pop();

x += y;

s.pop();

s.push(x);s.push(y); s.push(2);s.pop();s.pop();

while (! s.isEmpty( ))

{

y = s.pop();

System.out.println(y);

}

System.out.println("x = " + x);

System.out.println("y = " + y);

The output of the second program fragment would be:

2 1 3

x = 4

y = 1

3. A letter means push and an asterisk means pop in the following sequence. Give

the sequence of values returned by the pop operations when this sequence of

operations is performed on an initially empty stack.

E A S \* Y \* Q U E \* \* S T \* I O \* N \* \* \*

The sequence of values returned by the pop operations when the given sequence of operations is performed on an initially empty stack would be:

N O I T S E Q U E Y A S

4. A letter means push and an asterisk means pop in the following sequence. Give

the contents of s[0], ..., s[4] after this sequence of operations is performed on an

initially empty stack (the stack is implementated by array s[]).

L A \* S T I \* N \* F I R \* S T \* O U \* T \* \* \* \*

The contents of s[0], ..., s[4] after the sequence of operations is performed on an initially empty stack would be:

T S I N A

5. A letter means enqueue and an asterisk means dequeue in

the following sequence. Give the sequence of values returned

by the dequeue operation when this sequence of operations is performed on an

initially empty queue.

E A S \* Y \* Q U E \* \* S T \* \* I O \* N \* \*

The sequence of values returned by the dequeue operation when the given sequence of operations is performed on an initially empty queue would be:

E A S Y Q U E S T I O N

6. A letter means enqueue and an asterisk means dequeue in the following

sequence. Give the contents of q[0], ..., q[4] after this sequence of operations is

performed on an initially empty queue (the queue is implementated by circular array

q[] with size 5).

E A S \* Y \* Q U E \* S T \* \* I O \* N \* \*

The contents of q[0], ..., q[4] after the sequence of operations is performed on an initially empty queue implemented by a circular array q[] with size 5 would be:

S T I O N A