Homework 3

1.

	Static	Stack dynamic
Advantages	• Quick to allocate/deallocate • Subprograms can be history sensitive	• Support for recursion • Storage is shared among some subprograms
Disadvantages	• Does not support recursion • Subprograms cannot share storage	• Takes longer to allocate/deallocate • Subprograms cannot be history sensitive

2.

When calling subprograms as parameters and the language in use allows nested subprograms, it is ambiguous as to which referencing environment is used to execute the passed subprogram. One approach is **shallow binding** where the environment of the call statement that executes the passed subprogram is used. Another approach is **deep binding** where the environment of the definition of the passed subprogram is used.

3. Chapter 9 #5

(**a**) Pass by value doesn't change the value of the arguments outside of the function definition so the values of `value` and `list` remain unchanged.

(**b**)

`value`	`list`
1	{2, 3, 5, 7, 9}
1	{3, 2, 5, 7, 9}
2	{3, 1, 5, 7, 9}

4. Chapter 9 #7

(**a**) Pass by value doesn't change the value of the arguments outside of the function definition so the values of `list` remain unchanged.

(**b**) `list = {2, 6}`

5. Chapter 10 #3

ARI (see figure 1):

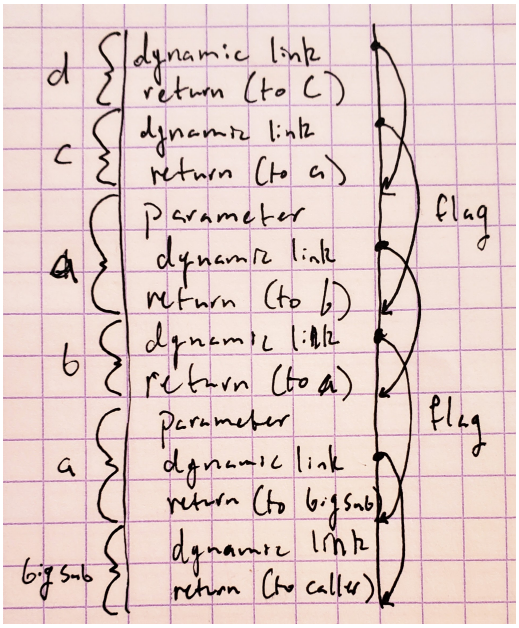

Figure 1: ARI for question 5