1) Static scoping is when functions uses variables declared in their environment and not related to runtime but compiled time while as dynamic scope use variables declared recent and is related to runtime.

Example:

```
Let val n = 2
    Val x = n+1
in Let val n = 1
   in
     n + x
   end
end
```

In dynamic scope, the function will output 3 since the most recent declared value of n is 1 whiles the output will be 4 in static scope because x will be evaluated to 3

```
fun f x =
    let val n = 3
      x + n
    In let val n = 1
       in
         x + n
       end
end
```

when we evaluate # 1, the output will be 2 in dynamic scope while the output will be 4 in static scoping

4) A closure is a technique for implementing static scoped name binding. Its a record storing a function together with an environment. A closure consists of a code pointer (indicating what the function does) and an environment containing the free values of the function. Its necessary to preserve state of variables not to go out of scope

Example.

① Let
val x = 5
in
fn y => x + y
end

② Let
val b = 8
in
fn a => (a / b) + (a - b)
end