

1. The two major uses of LA are to store the absolute address of a D(X,B) into a register and to load a constant into a register without declaring storage explicitly. L differs from the LA instruction because LA loads the absolute address of the D(X,B) given and stores it in the last 3 bytes of R. L copies the contents at the absolute address of the D(X,B) into R.
2. A DS is used to declare empty storage of a certain length and storage class. A DC is used to declare storage of a certain length and storage class with an initial value. Using a DS and giving it a 'value' when you should have used a DC will not work as expected because the store will not be filled with the value. The storage will be initialized as empty instead.
3. If I was computing the result of an equation  $a+b$  using registers, I would first store the value of a into a register. Then I would store the value of b into a different register. Next, I would use the AR instruction to add the contents of the register storing b to the contents of the register storing a and store the result in the register holding the value of a. This way lets me use program storage as if there were variables. If I was computing the result of an equation  $a+b$  using program storage, I would use DC to define a constant with a value of a and a label A. Next, I would use DC again to define a constant with a value of b and a label B. I would also use DS to define empty storage with a label of C. Then, I would use L to load the value of a into a register. Then, I would use the A instruction and add the B label to the register holding the value of a. Finally, I would use ST to store the result of the addition into the storage with label C.