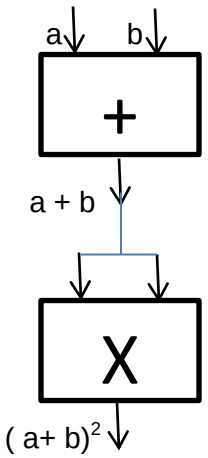
Solution of assignment No.1

1.1 Every computer can do the same thing as every other computer. A smaller or slower computer will just take longer.
1.2 No.

1.4 Ambiguity.
1.5 (a) inputs to first (x) box are a and x
output of first (x) box is ax
inputs to second (+) box are ax and b
output of second (+) box is ax + b
(b) inputs to first (+) box are w and x
output of first (+) box is w + x
inputs to second (+) box are y and z
output of second (+) box is y + z
inputs to third (+) box are (w + x) and (y + z)
output of third (+) box is w + x + y + z
inputs to fourth (x) box are (w + x + y + z) and .25
output of fourth (x) box is 0.25(w + x + y + z), which is the average
(c) The key is to factor $a^2 + 2ab + b^2 = (a + b)^2$
Inputs to first (+) box are a and b
Output of first (+) box is a + b
Inputs to second (x) box are (a + b) and (a + b)
Output of second (x) box is $(a+ b)^2 = a^2 + 2ab + b^2$



1.9 Yes, if phrased in a way that is definite and lacks ambiguity.
1.10 Definiteness: each step is precisely stated.
Effective Computability: each step can be carried out by a computer.
Finiteness: the procedure terminates.
1.16 Possible operations, data types, addressing modes.
1.17 An ISA describes the interface to the computer from the perspective of the 0s and 1s of the program. For example, it describes the operations, data types, and addressing modes a programmer can use on that particular computer. It doesn't specify the actual physical implementation. The microarchitecture does that. Using the car analogy, the ISA is what the driver sees, and the microarchitecture is what goes on under the hood