



EE444 Digital Computer Systems

Fall 2008

Homework 1; Due Tuesday Sep 16th, 2008
To be done in groups of up to 3 students

Answer the following questions:

1. Can program development be done by a program? Justify your answer.
2. Suppose we have an unsolvable problem, can we write an algorithm for it? Justify your answer.
3. Does a compiler need to be written in assembly? If so, why? If not, why not?
4. If we want to calculate PI (that is $22/7$), can this problem be solved by a computer? Please justify.
5. Write an algorithm to compute $(a*b)$ without using a multiplication operation.
6. Write the C/C++ program equivalent to the algorithm you have written in 5.
7. What are the main differences between an algorithm and a program?
8. Show the lexical and syntactic analysis of the following C statement:
 $x = ((a + b)/c) / ((3.14 + x) - \sin(y * x));$

From the textbook (3rd Edition):

1.52
1.54