Q1)

a) Define the binary logarithm (denoted in class by $\log_2 n$).

b) What is the binary logarithm of 42?

c) Write a number whose binary logarithm is 5. How many such numbers are there?

d) Give pseudocode to compute the binary logarithm. Assume the input is an integer stored in a variable called *n*. Your program has to print $\log_2 n$.

e) Estimate the running time of your pseudocode.

Q2)

For this question you have to write in about 300 words (or more if you like) about either one of the following two topics, drawn from the first two weeks' readings from Brooks's book. Whichever topic you choose, please try to give inject a personal element based upon your experience with Scribbler so far.

a) Brooks's design of Genghis, and whether reading about it changed your perception about machine intelligence.

b) Brook's vision of machines to live with, and how you feel about that vision.

Submit your write-up as part of the assignment.

Q3)

Imagine you are advising a department store that wishes to increase internet sales on its website. Your analysis shows that they have much less traffic to their website compared to their competitors. Write a brief memo to them---couple paragraphs---listing a few of their options (based upon the lectures and readings), and also comment on the technical feasibility and legal implications of this advice.