Question 1.

Problem 27 on page 72, chapter 2 of Duda’s textbook.

Question 2

Write a program to evaluate the Bayesian belief net for fish in Example 3 of the textbook, including the information in $P(x_i|a_j), P(x_i|b_j), P(c_i|x_j)$, and $P(d_i|x_j)$.

Test your program on the calculation given in that same Example.

Then, apply your program to the following cases, and state any assumptions you need to make.

(a) A light, thin fish is caught in the South Atlantic in the Winter. What is the probability it is a salmon?

(b) A thin, dark fish is caught in the South Atlantic. What is the probability it is winter? spring? summer? autumn?

(c) A dark, wide fish is caught in the Summer. What is the probability it came from the North Atlantic?
Above is my solution (blacked out) just to give you an idea of how long you should expect the Matlab code to be. **You do NOT have to do it in Matlab.** Again, this is just to give you an idea of the complexity, or should I say “how easy” this problem is. ;-)