

## 1994 Paper 2 Question 4

State and prove Bayes's Theorem for obtaining the probability of  $A$  given  $B$  from the probability of  $B$  given  $A$  and the probabilities of  $A$  and  $B$ . [4 marks]

A box of computer components contains items made to the same specification from two different manufacturers, Proctor and Co. and Constable and Co., in the ratio 3:2. It is known that 1 in 1000 of Proctor's components are faulty, but only 1 in 1500 of Constable's. A component is drawn at random from the box and found to be faulty. What is the probability it was manufactured by Proctor and Co.?

[16 marks]