4. Anju has a bag that contains 5 socks of which 2 are blue.

Anju randomly selects socks from the bag, one sock at a time. She does not replace any socks but continues to select socks at random until she has both blue socks.

The discrete random variable S represents the total number of socks that Anju has selected.

(a) Write down the value of $P(S = 1)$

(1)

(b) Find $P(S > 2)$

(3)

(c) Find $P(S = 3)$

(2)

(d) Given that the second sock selected is blue, find the probability that Anju selects exactly 3 socks.

(2)

(e) Find $P(S = 5)$

(3)

(Total for Question 4 is 11 marks)