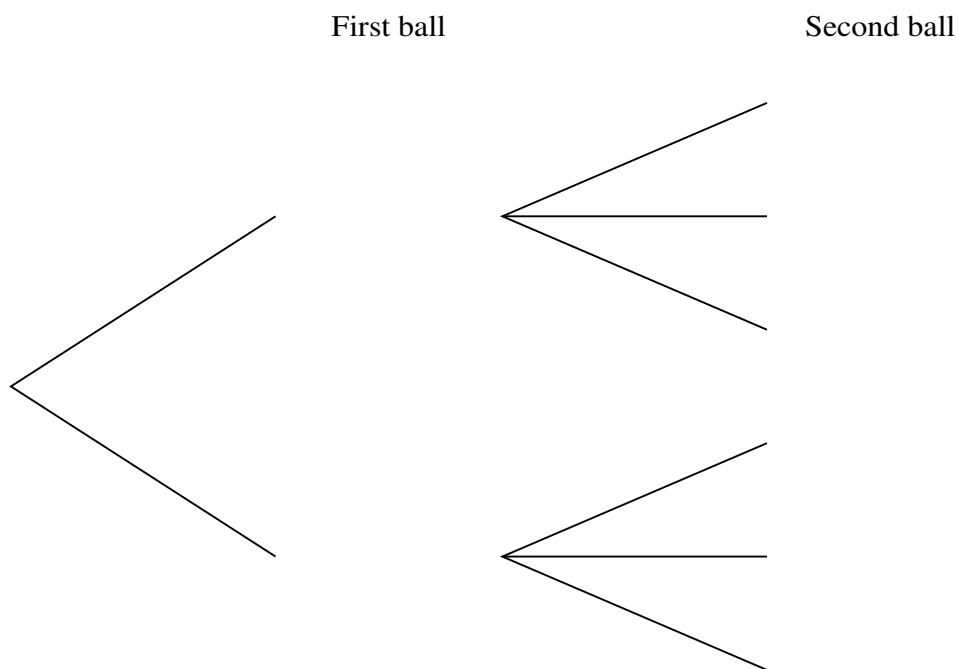**3** A box contains 3 red balls and 5 blue balls. One ball is taken at random from the box and not replaced. A yellow ball is then put into the box. A second ball is now taken at random from the box.

(i) Complete the tree diagram to show all the outcomes and the probability for each branch.   [2]

First ball   Second ball

(ii) Find the probability that the two balls taken are the same colour.   [2]

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(iii) Find the probability that the first ball taken is red, given that the second ball taken is blue. [3]

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