4 Bag A contains 8 red marbles and 3 blue marbles. Bag B contains 4 red marbles and 1 blue marble.

A marble is chosen at random from bag A. If the marble chosen is red, it is discarded. If the marble chosen is blue, it is placed in bag B.

A marble is then chosen at random from bag B. If the marble chosen is red, it is discarded. If the marble chosen is blue, it is placed in bag A.

A marble is now chosen at random from bag A.

(b) Find the probability that all three marbles chosen are the same colour. [2]

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