5   Each day John either cycles to work or goes on the bus.

- If it is raining when John is ready to set off for work, the probability that he cycles to work is 0.4.
- If it is not raining when John is ready to set off for work, the probability that he cycles to work is 0.9.
- The probability that it is raining when he is ready to set off for work is 0.2.

You should assume that days on which it rains occur randomly and independently.

(a) Draw a tree diagram to show the possible outcomes and their associated probabilities.   **[3]**

(b) Calculate the probability that, on a randomly chosen day, John cycles to work.   **[3]**

John works 5 days each week.

(c) Calculate the probability that he cycles to work every day in a randomly chosen working week.   **[2]**