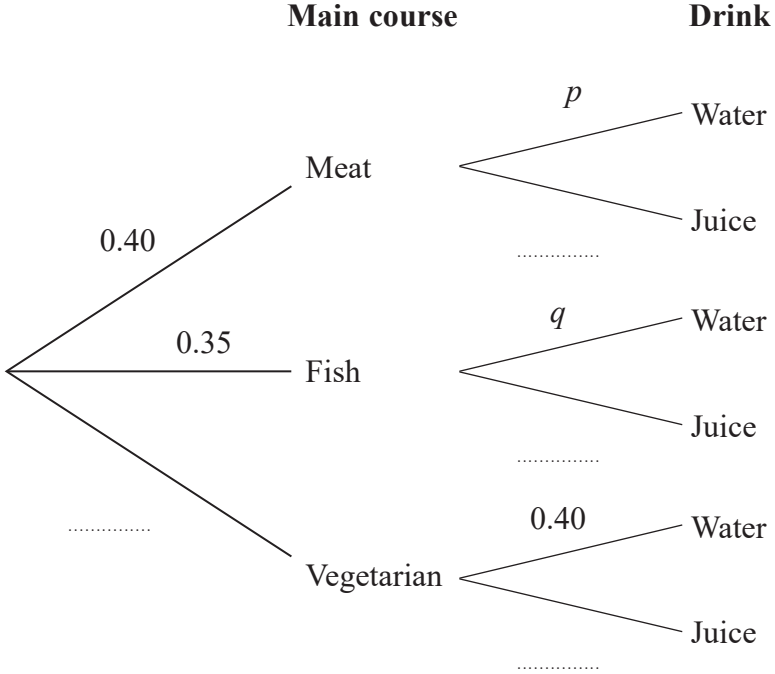
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2. In a school canteen, students can choose from a main course of meat (M), fish (F) or vegetarian (V). They can then choose a drink of either water (W) or juice (J).

The partially completed tree diagram, where p and q are probabilities, shows the probabilities of these choices for a randomly selected student.



(a) Complete the tree diagram, giving your answers in terms of p and q where appropriate.

(2)

(b) Find an expression, in terms of p and q, for the probability that a randomly selected student chooses water to drink.

(1)

The events "choosing a vegetarian main course" and "choosing water to drink" are independent.

(c) Find a linear equation in terms of p and q.

(2)

A student who has chosen juice to drink is selected at random. The probability that they chose fish for their main course is $\frac{7}{30}$

(d) Find the value of p and the value of q.

(5)

The canteen manager claims that students who choose water to drink are most likely to choose a fish main course.

(e) State, showing your working clearly, whether or not the manager's claim is correct.

(3)

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Question 2 continued

(Total 13 marks)

Q2