8. When Paul goes to work, he travels by car **or** by bicycle **or** he walks.

- the probability that he travels by car is $\frac{1}{2}$
- the probability that he travels by bicycle is $\frac{1}{6}$
- the probability that he walks is $\frac{1}{3}$

Given that Paul

- travels by car, the probability that he is late is $\frac{1}{5}$
- travels by bicycle, the probability that he is late is $\frac{1}{10}$
- walks, the probability that he is late is $\frac{1}{20}$

(a) Show that on any day that Paul goes to work, the probability that he is late is $\frac{2}{15}$

(1)

Given that Paul is late on a day that he goes to work,

(b) show that the probability that he travels to work by car is $\frac{3}{4}$

(2)

(c) Hence complete the tree diagram on page 28, to represent the given information.

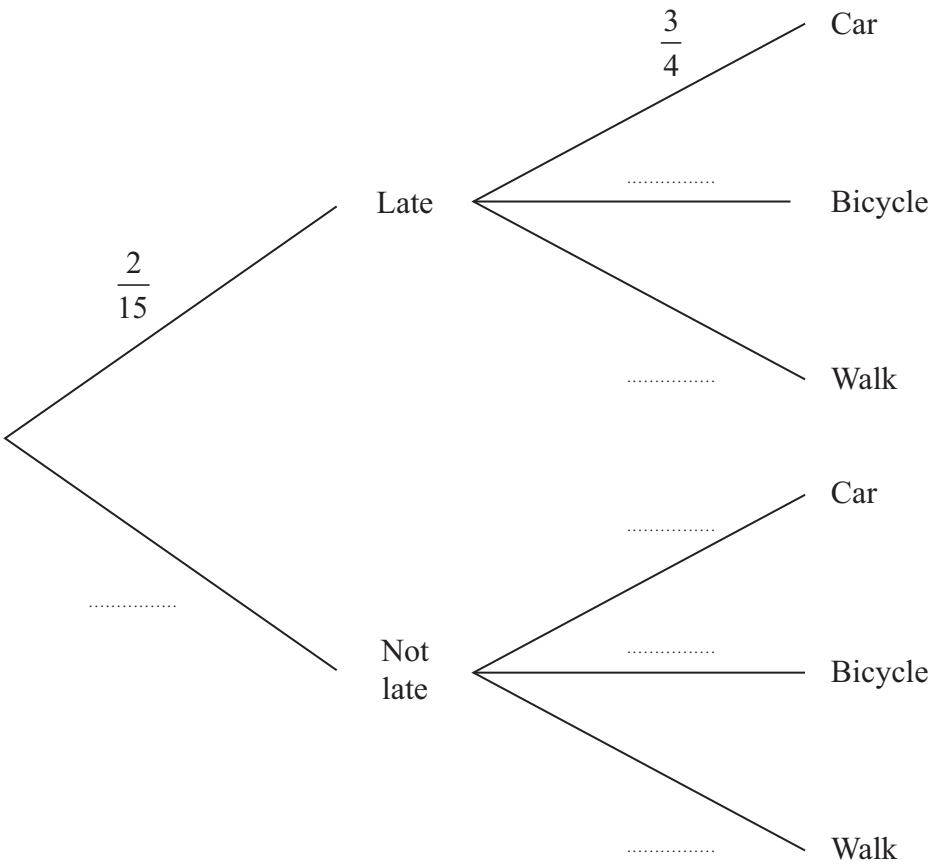
(4)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

Question 8 continued

Question 8 continued



(Total for Question 8 is 7 marks)

TOTAL FOR PAPER IS 75 MARKS

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA