

Subject 31

Probability

Please don't write on the exam paper.

At a petrol station, 30% of customers buy ordinary diesel. 60% buy unleaded petrol. The remainder buy higher quality diesel.

25% of customers who buy ordinary diesel will fill the tank.

80% of customers who buy unleaded petrol will not fill the tank.

Among those who buy higher quality diesel, 70% will fill their tank.

- a) Draw a probability tree diagram to illustrate this situation.
- b) What is the probability that when a car leaves the petrol station, it does not have a full tank ?
- c) Given that a car leaving the petrol station has a full tank, what is the probability that the tank contains unleaded petrol?