THEME : Probabilities

Please do not write on the subject paper and don't forget to give back the examination paper at the end of the test.

Some travellers are arriving in a small airport, 60% fly on major airlines, 30% fly on private planes, and the remainder fly on commercial planes not belonging to a major airline.
Among those travelling on major airlines, 50% are travelling for business reasons, whereas 60% of those arriving on private planes and 90% of those arriving on other commercially owned planes are travelling for business reasons.
Let's label : - M the event the traveller flies on major airlines.
- P the event the traveller flies on a private plane
- O the event the traveller flies on another commercial airline.
- B the event the traveller flies for business reasons.

Suppose that we randomly select one person arriving at this airport.

1. Draw a probability tree showing the situation.
2. What is the probability that the person is travelling for business on a private plane ?
3. What is the probability that the person is travelling on business ?
4. What is the probability that the person is arrived on a private plane, given that the person is travelling for business reasons?
5. What is the probability that the person is flying on another commercial plane given that he or she is not travelling for business ?