1. Jeff plays a game which consists of throwing a bean bag into a bucket.

Jeff has a maximum of three attempts to get the bean bag into the bucket.

If he gets the bean bag into the bucket, he wins the game and stops throwing.

- On his first attempt, the probability that Jeff gets the bean bag into the bucket is p
- On his second attempt, the probability that Jeff gets the bean bag into the bucket is 0.35
- On his third attempt, the probability that Jeff gets the bean bag into the bucket is 0.5

(a) Draw a tree diagram to represent this information.
Label the probabilities, in terms of p where necessary.

(2)

The probability that Jeff wins the game is 0.74

(b) Find the value of p

(3)

(c) Find the probability that Jeff does **not** win the game.

(1)

(d) Given that Jeff wins the game, find the probability that he does this on his second attempt.

(2)

(Total for Question 1 is 8 marks)