Geometric Distribution - Overview (10/6/21)

Q1 [10 marks]

Repeated independent trials of an experiment are carried out. On each trial the probability of success is $\frac{1}{10}$.

(i) Find the probability that the 1st success occurs after the 6th trial. [2 marks]

(ii) Find the probability that the 3rd success occurs on the 6th trial. [3 marks]

(iii) Find the smallest value of n such that the probability of at least one success in n trials is more than $\frac{9}{10}$. [5 marks]

Q2 [6 marks]

Repeated independent trials of an experiment are carried out. On each trial the probability of success is $\frac{1}{5}$.

(i) Find the probability that the 1st success occurs after the 5th trial. [3 marks]

(ii) Find the probability that the 2nd success occurs on the 10th trial. [3 marks]