4. An optician is testing patients for a specific eye condition.

It is known from past records that 5% of patients have this eye condition.

(a) Find the probability that from a random sample of 30 patients

(i) exactly one patient has the eye condition,

(ii) no more than 2 patients have the eye condition.

(2)

The optician claims that the proportion of patients with the eye condition has changed.

A random sample of 150 patients is taken and 13 have the eye condition.

(b) Using a suitable approximation, carry out an appropriate test to investigate the optician's claim. Use a 5% level of significance and state your hypotheses clearly.

(6)

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Question 4 continued

(Total for Question 4 is 8 marks)