7. The discrete random variable X is given by

$$X \sim \mathrm{B}(n, p)$$

The value of n and the value of p are such that X can be approximated by a normal random variable Y where

$$Y \sim \mathrm{N}(\mu, \sigma^2)$$

Given that when using a normal approximation

$$\mathrm{P}(X < 86) = 0.2266 \quad \text{and} \quad \mathrm{P}(X > 97) = 0.1056$$

(a) show that $\sigma = 6$

(7)

(b) Hence find the value of n and the value of p

(3)

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Question 7 continued

Question 7 continued

(Total for Question 7 is 10 marks)

TOTAL FOR PAPER IS 75 MARKS

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