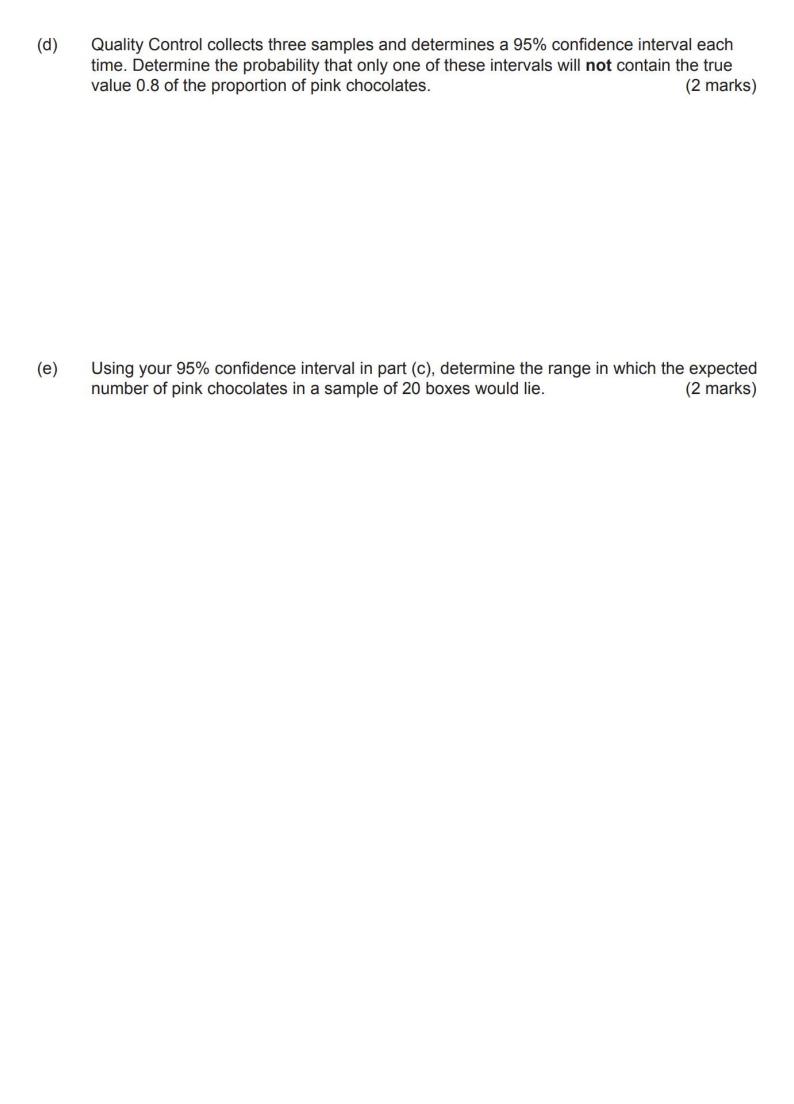
Question 20					
A chocolate factory produces chocolates of which 80% are pink. Each box of chocolates contains exactly 30 pieces.					
(a)	Identify the probability distribution of $X=$ the number of pink chocolates in a and also give the mean and standard deviation.	single box (3 marks)			
(b)	Determine the probability, to three decimal places, that there are at least 27 period chocolates in a randomly selected box.	oink (3 marks)			

Quali total.	ty Control collects samples sizes of 20 boxes and counts the number of pink chocolates in
(c)	Determine a 95% confidence interval for the proportion of pink chocolates in a sample of 20 boxes, using the assumption that 80% of chocolates in the sample are pink. (2 marks)



Quality Control counted the number of pink chocolates in five samples as shown below.

Sample	1	2	3	4	5
Number of pink chocolates	433	463	482	473	566

(f) Decide which samples lie outside the 95% confidence interval, if any. Justify. (2 marks)