Question: 1) Suppose a manufacturer has 10 pistons. On the average, 8...

1) Suppose a manufacturer has 10 pistons. On the average, 80% of his pistons are accepted. What is the probability that at most 8 pistons are rejected because they are either oversize or undersize?

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Expert Answer

Anonymous answered this
767 answers

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Answer:

so Given that on an average 80% of the pistons are accepted. This implies that the proportion of Pistons rejected is p=0.20.

Number of pistons the manufacturer has n=10

Since there can be only atwo outcomes is acceptance and rejection, the number of pistons rejected follows a Bionomial probability distribution with n=10 and p=0.2. The pmf of this distribution is

$$P(X=x)=\binom{10}{x}*0.2^{x}*(1-0.2)^{10-x}, x=0,1,2,...,10$$