Answer on Question #55958 – Math –Statistics and Probability

An automobile manufacturer has discovered that 20% of all the transmissions it installed in a particular style of truck one year are defective. It has contacted the owners of these vehicles and asked them to return their trucks to the dealer to check the transmission. The Friendly Auto Mart sold seven of these trucks and has two of the new transmissions in stock. What is the probability that the auto dealer will need to order more new transmissions?

Solution

The Friendly Auto Mart sold seven of these trucks and has two of the new transmissions in stock. The probability that the auto dealer will need to order more new transmissions is

$P(>2) = 1 - \binom{7}{0} 0.2^0 0.8^7 - \binom{7}{1} *0.2^1*0.8^6 - \binom{7}{2} 0.2^2 0.8^5 = 1 - 0.8^7 - 7 \cdot 0.2 \cdot 0.8^6 - 21 \cdot 0.04 \cdot 0.8^5 =$

$=0.148.$