Name

Please be neat and show all your work so that I can give you partial credit.
GOOD LUCK.

Question 1
Question 2
Question 3

Total
1. The mean time to expose a single panel in a circuit board plant is 2 minutes with a standard deviation of 1.5 minutes.

(a) What is the squared coefficient of variation of the exposition time of a single panel?

(b) If the times remain independent, what would be the mean and the variance of the exposition time of a job of 60 panels? What would be the coefficient of variation?
(30) 2. Consider two different machines, A and B, that could be used at a station. Machine A has a mean effective process time of 1 hours and squared coefficient of variation of 0.25. Machine B has a mean effective process time of 0.85 hours and a squared coefficient of variation of 4. For an arrival rate of 0.92 jobs per hour with squared coefficient of variation 1, which machine will have a shorter average cycle time (time from arrival until jobs leave the station)?
3. (30) (a) A department store sells Christmas cards during the Christmas season for $3 per pack. Any unsold cards after Christmas are sold at half-price. The cost of procurement of the card is $2.5 per pack. How many cards should the store stock for the season if the demand is a discrete uniform random variable between 101 and 300 and the objective is to minimize the expected cost?

(10) (b) What is minimum expected cost?