Homework 2---GSBA 545

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1. Answers:
   1. dollars
   2. The difference between policy expected value and annual rate is dollars. It is because policy holders tend to be “risk-averse”. They would pay more fee than expected loss to guarantee their loss is stably locked to a lower number.
2. Answers:
   1. The table is as follow:

|  |  |
| --- | --- |
| Probability | X |
| 0.25 | 8000 |
| 0.5 | 22000 |
| 0.25 | 36000 |

* 1. The expected value is dollars.
  2. The standard deviation is

1. Answers:
   1. The expected mean loss should overtake protector price, which means . The probability is larger than . For X as whole value of TV($4000), .
   2. It is not a good deal. Because we estimate the lightning probability will be . The five-year estimation should be . The loss should be over , but TV only worth $4000. So protection doesn’t worth the price.
2. Answers:
   1. The expected premium is dollars. The expected value is dollars.
   2. The standard deviation is
   3. I think the agent will target high credit customers. Because those customers occupy more population. The 700-850 share is, larger than other shares. Agent gets more customers from the share and profit more while the risky customers are too few to seek.
3. The 15% lower part of a standard normal distribution is , so we can calculate lower limit as dollars.
4. Answers:
   1. Transfer probability with 150 mean and 15 standard deviation into standard normal distribution. 170 is in accordance with . So .
   2. Under standard normal distribution 0.99 probability endpoint is 2.326, so we need spots.
5. Answers:
   1. Convert to standard normal distribution, 4.7 minutes is in accordance with . Corresponding probability is . It’s less than 5%, so no more operator is needed.
   2. 1% probability in standard normal distribution is 2.326, so minutes.
6. The distribution mean is , so . For an exponential distribution with , .
7. Answers:
   1. The time lapse follows exponential most likely. By estimating , .
8. Answers:
   1. The hits per minute follows Poisson distribution most likely. By estimating , .
9. The typos follow Poisson Distribution with
   1. The typos on three pages can be regarded as