

HOMEWORK 6

Chapter 6: 2, 9, 16, 23, 32, 33, 34, 35, 38¹ 45

1. Let $X = \text{Geo}(p)$ and $Y = \text{Poi}(1)$. Find p so that $P(X > Y) = 1/2$.
2. (This was taken from an actuarial exam.) An insurance company designates 10% of its customers as high risk and 90% as low risk. The number of claims made by high and low risk customers in a calendar year are Poisson distributed with means $\lambda_h = 2$ and $\lambda_\ell = 1$ and is independent of the number of claims made by a customer in the previous calendar year. Calculate the expected number of claims made in calendar year 2017 by a customer who made one claim in calendar year 2016.

2. $7/11$

9. $2/3$

16. $14/30$

23. $.9568$

32. $p1 = .2/.72$

33. $1/4$ and $1/3$

34. $.9524$

35. $1/51$

38. $7/9$

45. $4/5$

1. $\log 2$

2. 1.0756

¹they are photojournalists, not hunters