A word of warning

These answers are transcripts of suggested answers and are not endorsed/verified by OU; there may be typo's. These answers are also heavily abbreviated from the level of detail and presentation that would likely be required in an exam answer.

1998

Q2. mean 5 , variance 11.2

Q3. (2.6,6.175,8.5,11.375,19.2), iqr = 5.2

Q6. 4/9

Q7. mean 1, variance 1

Q9. X~Geometric(0.0186), mean 53.8, variance 2836.7

Q10. 0.693

Q12. (a) X~Poisson(90), (b) Y~M(2)

Q13. mean 2, variance 10

Q15. 0.3768

Q16. (b) 0.0326

Q17. $q^{10}p^3$

Q20. (3.794,3.946)

Q21. (3.796,3.944)

Q24. sum of sample sizes = 26

Q32. A & D true

Q33. $\hat{M} = \begin{bmatrix} 0.7241 & 0.2759 \\ 0.4211 & 0.5789 \end{bmatrix}$

1999

Q2. 1.555, 1.345

Q8. p(liat)=5/40=0.125

Q10. mean 1, variance 1

Q11. X~Geometric(0.01), mean = 100, sd = 99.5

Q12. X~U(0,10), mean = 5, variance = 8.33, 3/10=0.3

Q13. 5.30

Q15. 0.0902

Q18. 0.0821, variance = 120

Q19. 0.8413, 16.41

Q20. Poisson(54), 0.0765

Q21. $\Phi(-5) \approx 0$

Q23. p=0.5288 (0.498,0.559)

Q30. $W_+ \approx N(264,2860)$ -> $\Phi(-2.11)$ -> SP(total) = 0.0348

Q31. intercept = -763.86

Q33. 12063/23756 = 0.5078,
(5687+696)/23756 = 0.2687,
9640/12063 = 0.7991,
696 x 658 / 23756 = 19.28

Q34. df=4, SP<<0.005

Q36. $\hat{M} = \begin{bmatrix} 0.71875 & 0.28125 \\ 0.52941 & 0.47059 \end{bmatrix}$

No. of runs = 19

SP(total)=0.155

2000

Q2. 45,62

Q6. mean = 1, median = 0

Q8. X~Geometric(0.002), mean 500, sd 499.5

Q9. (a) 0.2401 (b) 0.4116 (c) 0.3483

Q10. 316.23

Q11. receiving drug, X~B(110,42/110=0.382)
receiving placebo, Y~(102,12/102=0.118)

Q12. X is discrete uniform
Mean 10.5, variance 33.25
4/20 = 0.2 (!!!)

Q13. (a) mean 6, variance 20 (b) mean -2, variance 20

Q15. 0.801

Q16. (a) 0.6915, (b) 0.0622

Q17. (a) T≈N(9900,2500) (b) mean 9.9kg, sd 0.05kg (c) 0.0228

Q18. (a) T~Poisson(25) (b) T≈N(25,25) -> 1-Φ((30.5-25)/25)=0.1357

Q19. 0.0183

The parameter for the Poisson distribution is mu, the average number of failues per year. 1 failure every three months equals 4 failures per year so mu=4. Hence X~Poisson(4) and we need P(X=0) = e^(-4) = 0.0183.

Q20. p(hat)=0.0221

Q23. (1.667,2.317)

Q30. (b) 21.65 more TV's per 1000 population (c) (13.47,29.83)

Q34. (a) 29x22/55=11.6 (b) df=2

Q35. Poisson(6)

Q36. (a) $\hat{M} = \begin{bmatrix} 0.357 & 0.643 \\ 0.362 & 0.638 \end{bmatrix}$

(b) SP(total) = 0.844