

Section A (2014)

1.
(a) No (b) 0.5 (c) Yes
2.
(a) $B(8, 0.4)$ (b) 0.279
3.
(a) $P(12.5)$ (b) 0.948 interp
4.
(a) 0.7976 interp (b) 0.962
5.
(a) 12 (b) $1/3$
6.
(a) 39 (b) Reject
7.
(a) (39.49, 41.51, 38.51, 40.49)
(b) No evidence of association
8.
(a) $\text{Bin}(10, 0.5)$ (b) 7 (c) [see lecture notes]

Part B

9.
(a) [see lecture notes]
(b) (i) $3/13$
(ii) $1/4$
(iii) $7/26$
(iv) $31/78$
(v) $\Pr(B_{\text{am}}|A) = 5/47$
 $\Pr(B_{\text{ba}}|A) = 24/47$
 $\Pr(B_{\text{ch}}|A) = 18/47$
10.
(a)
(b) 1
(c) $3/5$
(d) $1 - 1/64 * (4 - x)^3$
(e) 0.8252
(f) positively skewed

(g) 19/64

11.

- (a) (i) [see lecture notes] (ii) [see lecture notes] (iii) Reject
- (b) (i) [see lecture notes] (ii) [see lecture notes] (iii) $t=-1.69$

12.

- a) (i) [see lecture notes] (ii) [see lecture notes] (iii) Do not Reject
- (b) (i) [see lecture notes] (ii) contribution to test statistic 3.79
- (c) (i) [see lecture notes] (ii) [see lecture notes] (iii) Reject