

Quiz 2 for Statistics 301
Elementary Statistical Methods - Fall 2000
Material Covered: Chapter 5 of Workbook and text
Friday, 22nd September

This is a 15 minute quiz, worth 5% and marked out of 5 points. The total possible points awarded for each question is given in square brackets at the beginning of each question.

Name (please print): _____ . ID Number: _____
last first

The number of sleepers, X , in any group of four children during rest time is given by the following probability distribution.

x	0	1	2	3	4
$P(X = x)$	0.2401	0.4116	0.2646	0.0756	0.0081

- (a) [1] The chance there is at least 3 sleepers is
(circle one) **0.0756 / 0.0837 / 0.5643 / 0.7321 / 0.9163.**
- (b) [1] The mean (expected) number of sleepers is
(circle one) **1.2 / 1.3 / 1.4 / 1.5 / 1.6.**
- (c) [1] $\sigma \approx$ (circle one) **0.72 / 0.82 / 0.92 / 1.02 / 1.12.**
- (d) [1] Random variable X has a binomial distribution where (circle one)
- (i) $n = 4, p = 0.1$ (ii) $n = 4, p = 0.2$ (iii) $n = 4, p = 0.3$
(iv) $n = 4, p = 0.4$ (v) $n = 4, p = 0.5$
- (e) There is a 70% chance a sleeping child will awake on each attempt by a teacher.
The chance a sleeping child awakes on the *third* attempt is
(circle one) **0.063 / 0.130 / 0.300 / 0.567 / 0.700.**

- (a) [1] **0.0837** (add chance of 3 and 4 sleepers)
- (b) [1] **1.2** ($np = 4(0.3)$)
- (c) [1] **0.92** ($\sqrt{np(1-p)} = \sqrt{4(0.3)(0.7)}$)
- (d) [1] (iii) $n = 4, p = 0.3$ (use `binompdf(4,0.3, L_1)`)
- (e) [1] **0.063** (geometric: $0.3^2(0.7)$)