

Quiz 3 for Statistics 301
Elementary Statistical Methods - Spring 2000
Material Covered: Chapter 5 of Workbook and text
For: Friday, 25th February

Name (please print): _____
last first

Consider the following distribution of the number of calls, X , out of the next five who telephone your house, is a salesperson. For example, there is a 39.6% chance that one out of the next five calls is a salesperson.

X	0	1	2	3	4	5
$P(X = x)$	0.237	0.396	0.264	0.088	0.015	0.001

- (a) [1] The probability that at most three of the next five calls is a salesperson is (circle closest one) **0.088 / 0.264 / 0.567 / 0.785 / 0.984**.
- (b) [1] $E(X) = \mu =$ _____.
- (c) [2] The variance is _____.
- (d) [1] **True / False** This is a binomial distribution where $p = 0.25$.
- (e) [1] Assume this is a binomial distribution where $p = 0.25$. This binomial distribution can be approximated (badly) by a Poisson distribution where $\lambda =$ (circle closest one) **1.25 / 1.45 / 1.65 / 1.85 / 2.05**.

- (a) [1] **0.984** (use `binomcdf(5,0.25,3)` or $1 - (0.015 + 0.001)$)
- (b) [1] **1.25** ($np = 1.25$ or long way)
- (c) [2] **0.97** ($\sigma^2 = np(1 - p)0.94$ or long way)
- (d) [1] **True** (use `binompdf(5,0.25)` on your calculator)
- (e) [1] **1.25** $\lambda = np = 1.25()$