

Quiz 2 for Statistics 301
Elementary Statistical Methods - Spring 2001
Material Covered: Chapter 5 of Workbook and text
Friday, 9th February

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

1. [2 points] Circle true or false.

- (a) **True / False** Discrete random variables may not assume negative values.
- (b) **True / False** A discrete random variable may assume only a finite number of different values with positive probability.
- (c) **True / False** For every discrete random variable, $\sigma^2 = npq$.
- (d) **True / False** It is possible to obtain eight successes in a binomial experiment experiment with six trials, provided the probability of a success on a single trial is greater than 0.5.

2. Consider the probability function $P(X = x) = \frac{6-|x-7|}{36}$, for $x = 2, 3, \dots, 12$.
(Hint: The absolute value key on your calculator is at MATH NUM.)

- (a) [1 point] $P(5 \leq x < 8) \approx$ (circle one) **0.415 / 0.463 / 0.563 / 0.732 / 0.916**.
- (b) [1 point] $\mu \approx$ (circle one) **5 / 6 / 7 / 8 / 9**.
- (c) [1 point] $\sigma^2 \approx$ (circle one) **5.8 / 6.1 / 6.4 / 6.7 / 6.9**.

- (1) **False, False** (can be infinity of values)
False (this is true for binomial *only*)
False (since cannot have more successes than number of trials)

(2a) **0.415** ($P(5) + P(6) + P(7) = 0.11 + 0.14 + 0.17$)

(2b) **7** ($2(0.028) + \dots + 12(0.028)$)

(2c) **5.8** ($(2 - 7)^2(0.028) + \dots + (12 - 7)^2(0.028)$)