

Quiz 5 (Individual) for Statistics 213
Probability and Decision Theory - Spring 1999
Material Covered: Sections 7.5,7.6 of Workbook and text
For: 2nd April

This is a 15 minute quiz, worth 6% and marked out of 6 points. The total possible points awarded for each question is given in square brackets at the beginning of each question. Anything that can fit on one side of an 8½ by 11 inch piece of paper may be used as a reference during this quiz. A calculator and appropriate statistical tables may also be used. No other aids are permitted.

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

Of 200 customers, 120 are regulars (Rs). Fifty of the regulars paid with cash (C) and 70 paid with credit card (CR). Forty of the nonregulars (NRs) paid with cash.

| | cash (C) | credit card (CR) | |
|-------------|----------|---------------------|-----|
| regular (R) | 50 | 70 | 120 |
| nonreg (NR) | (b) | 40 | (a) |
| | (c) | (d) | 200 |

1. [1] Fill in the blanks.

| | | | | |
|--|-----|-----|-----|-----|
| | (a) | (b) | (c) | (d) |
| | | | | |

2. Circle one or fill in the blank.

(a) [1] $P(R) =$ (circle one) $\frac{120}{200} / \frac{40}{200} / \frac{40}{80} / \frac{70}{110}$

(b) [1] $P(C \text{ and } NR) =$ (circle one) $\frac{120}{200} / \frac{40}{200} / \frac{40}{80} / \frac{70}{110}$

(c) [1] $P(C|NR) =$ _____.

(d) [1] $P(R^c|CR) =$ _____.

(e) [1] The events C and NR are dependent on one another because two probabilities are not equal to one another.

What two probabilities? _____.

1. [1] Fill in the blanks.

| | | | | |
|--|-----|-----|-----|-----|
| | (a) | (b) | (c) | (d) |
| | 80 | 40 | 90 | 110 |

2. Circle one or fill in the blank.

(a) [1] $P(R) = \frac{120}{200}$

(b) [1] $P(C \text{ and } NR) = \frac{40}{200}$

(c) [1] $P(C|NR) = \frac{40}{80}$

(d) [1] $P(R^c|CR) = \frac{40}{110}$

- (e) [1] The events C and NR are dependent on one another because two probabilities are not equal to one another. What two probabilities?
 $P(C|NR) \neq P(C)$ or $P(NR|C) \neq P(NR)$