

Quiz 1 for Statistics 213
Probability and Decision Theory - Spring 2002
Material Covered: Sections 2.1, 2.2 and 2.3 of workbook and text
Friday, 25th January

This is a 15 minute quiz, worth 5% and marked out of 5 points.

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

(a) [1 point] Consider the following system of linear equations.

$$\left[\begin{array}{cccc|c} 2 & 5 & 2 & 6 & 3 \\ -2 & 1 & 1 & 3 & -2 \\ 4 & 2 & 2 & 5 & 2 \\ -1 & 3 & 6 & 7 & -3 \end{array} \right]$$

Use rref to solve this system of equations:

$$(x, y, z, w) = (\text{_____}, \text{_____}, \text{_____}, \text{_____})$$

(b) [1 point] The solution of the following row-reduced 4×4 system

$$\left[\begin{array}{cccc|c} 1 & 0 & 0 & 0 & 3 \\ 0 & 1 & 0 & 0 & -3 \\ 0 & 0 & 1 & 0 & 2 \\ 0 & 0 & 0 & 0 & 5 \end{array} \right]$$

is (circle one) **unique** / **inconsistent** / **dependent**.

(c) [2 points] Determine the solution of the following row-reduced 4×4 system

$$\left[\begin{array}{cccc|c} 1 & 0 & 1 & 0 & 3 \\ 0 & 1 & 0 & 0 & 4 \\ 0 & 0 & 1 & 1 & -3 \\ 0 & 0 & 0 & 0 & 0 \end{array} \right]$$

$$(x, y, z, w) = (\text{_____}, \text{_____}, \text{_____}, \text{_____})$$

(d) [1 point] The solution of the following row-reduced 3×2 system

$$\left[\begin{array}{cc|c} 1 & 0 & -2 \\ 0 & 1 & 4 \\ 0 & 0 & 0 \end{array} \right]$$

is given by:

(a) $(x, y, z, w) = (0.704, 0.925, -0.417, -0.366)$

(b) **inconsistent**

(c) $(x, y, z, w) = (3 - t, -3, 2 + t, t)$, or $(3 - w, -3, 2 + w, w)$

(d) $(x, y) = (-2, 4)$