

UNIVERSITY OF REGINA
DEPARTMENT OF MATHEMATICS AND STATISTICS
Math122-001 Linear Algebra I
Summary Solutions for Sample Test 1

1. $\mathbf{u} \times \mathbf{v} = (4, -9, 2)$.
2. $2y - z - 1 = 0$.
3. $x = 1 + 2t, y = -2 - 3t, z = 3 + t$ (where $t \in \mathbb{R}$).
4. Intersects at unique point $(2, 2, 0)$.
5. (a) RREF: $\left[\begin{array}{cccc|c} 1 & 0 & 0 & 0 & 1 \\ 0 & 1 & 0 & 1 & 1 \\ 0 & 0 & 1 & 0 & 0 \end{array} \right]$;
(b) $(x, y, z, w) = (1, 1, 0, 0) + t(0, -1, 0, 1)$ (where $t \in \mathbb{R}$);
(c) $(1 - t) - 0 + t = 1$ as required.
6. (a) Impossible;
(b) $2A - C = \begin{bmatrix} 0 & 1 \\ 0 & -2 \end{bmatrix}$;
(c) $AB = \begin{bmatrix} 4 & -1 & 3 \\ -1 & 1 & -6 \end{bmatrix}$;
(d) impossible.

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