UNIVERSITY OF MANITOBA
Quiz 7A

COURSE: MATH 1210 DURATION: IN LABS
DATE & TIME: Apr 5/6/7, 16 Minutes EXAMINER: Borgersen/Kristel

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1. Let $\mathbf{n}$ be the vector $2\hat{\mathbf{i}} + 3\hat{\mathbf{j}} - \hat{\mathbf{k}}$.

[2] (a) Find any non-zero vector $\mathbf{v}$ that is perpendicular to $\mathbf{n}$.

[3] (b) Find a second non-zero vector $\mathbf{w}$ that is perpendicular to $\mathbf{n}$ such that $\{\mathbf{v}, \mathbf{w}\}$ is linearly independent.

[3] (c) Is it possible to find a third vector $\mathbf{u}$, which is perpendicular to $\mathbf{n}$, and such that the set $\{\mathbf{u}, \mathbf{v}, \mathbf{w}\}$ is linearly independent? Justify your answer. (This problem can be solved completely independently from part (a).)