MAT226, Spring 2020 **Renato Ghini Bettiol**

Homework Set 1

DUE: FEB 3, 2020 (AT THE BEGINNING OF CLASS)

To be handed in:

Please write your solution to Problems 1 and 2 on a single sheet of paper!

1. Given the vectors $\vec{v} = (3, 2, 1)$ and $\vec{w} = (0, -1, 1)$ in $\mathbb{R}^3$, compute the following:
   a) $\vec{v} + \vec{w}$
   b) $5\vec{v} - 4\vec{w}$
   c) $\langle \vec{v}, \vec{w} \rangle$
   d) $\langle \vec{v} + 2\vec{w}, \vec{v} - 3\vec{w} \rangle$

2. Find a **unit** vector $\vec{u}$ which is orthogonal to both $\vec{v}$ and $\vec{w}$.

NOT to be handed in (but recommended for you to practice with):

3. Textbook (5th edition) Section 11.1, Exercises 5-7, 25-28, 37-39, 84

4. Textbook (5th edition) Section 11.2, Exercises 25-27, 73-75

5. Textbook (5th edition) Section 11.3, Exercises 1-4, 59, 60

6. Textbook (5th edition) Section 11.4, Exercises 7-9