MAT 211: Linear Algebra

Problem Set 1

Stony Brook University Spring 2019
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Problem 1. (2+2+2 points) Consider two vectors $u = [5, 3]$ and $v = [3, 5]$. Compute:

1) $(u - v) \cdot v$,

2) $u \cdot (u + v)$,

3) $(u - v) \cdot (u + v)$,

where " $\cdot$ " denotes the dot product between vectors.

Problem 2. (*Bonus problem*, 2+2+2 points.) Check if the following vectors are parallel:

1) $[1, 2]$ and $[2, 1]$;

2) $[6, -9]$ and $[-4, 6]$;

3) $[1, 1]$ and $[2k, 4 - 2k]$, where k is a real number not equal to 1.

Due Date: Thursday February 14.