

Written HW1 – MATH 3503 Fall 2021

1. Let $\vec{a} = \langle 1, 5, 3 \rangle$ and let $\vec{b} = \langle -1, 2, 5 \rangle$. Compute $3\vec{a} - 2\vec{b}$.
2. Sketch a picture of $\vec{a} = \langle 1, 2 \rangle$ and place $\vec{b} = \langle -1, 5 \rangle$ in the same picture. In your sketch (or a second one), draw the vector addition $\vec{a} + \vec{b}$ by attaching them correctly (as in the “physicist’s interpretation” of vector addition).
3. Find all t such that $\langle t, \sqrt{t+1} - 1 \rangle = \langle t, t \rangle$.
4. Let $A = (1, 1, -3)$ and $B = (1, -2, 0)$ be points in \mathbb{R}^3 . Use CalcPlot3D (linked on course webpage) to plot A and B and the vector \overrightarrow{AB} .