1.3 Handwrite Practice

Handwrite your responses to 1., and 2. below and collate them into a PDF (a full size multipage PDF if you have more than one page) for submission into ASULearn.

1. Consider holding your thumb, pointer finger, and middle finger as in visualizations of the right-hand rule (search the internet if you aren't familiar with this). What do they span?

2. Let $\vec{v_1} = \begin{bmatrix} 1 \\ 3 \\ -1 \end{bmatrix}$ and $\vec{v_2} = \begin{bmatrix} -5 \\ -8 \\ 2 \end{bmatrix}$,

   a) Give a geometric description of the span $\{\vec{v_1}, \vec{v_2}\}$ and explain your reasoning.

   b) For what values of h is $\vec{b} = \begin{bmatrix} 3 \\ -5 \\ h \end{bmatrix}$ in the span of $\{\vec{v_1}, \vec{v_2}\}$? Use strict Gaussian elimination by-hand on the augmented matrix $[\vec{v_1} \ \vec{v_2} \ \vec{b}]$ (with h left general) and reason from row echelon form about consistency. Show work/reasoning.

   c) Is $h = 3$, i.e. $\begin{bmatrix} 3 \\ -5 \\ 3 \end{bmatrix}$ a linear combination of $\vec{v_1}$ and $\vec{v_2}$? Show work/reasoning.