Quiz 2 (Sections 1.2, 1.3)

You will have 30 minutes to complete the quiz.

Name:
Student Number:

Q1 Consider the line given by $\mathcal{L} = \left\{ t \begin{bmatrix} 2 \\ -3 \end{bmatrix} \in \mathbb{R}^2 \,:\, t \in \mathbb{R} \right\}$.

a. Sketch the line $\mathcal{L}$. Be sure to include labels. (1 Point)

b. Determine the projection, either by computation or graphically, of the point $A = (6, 4)$ onto the line $\mathcal{L}$. Include these point in your sketch. (2 Points)

Q2 Find the equation of the line through the point $(1, 3)$ and parallel to the vector $[2, -1]$. Is your solution unique? (2 Points)

Q3 Let A be a 1×2 matrix and $t \in \mathbb{R}$. Show that if $\vec{x} \in \mathbb{R}^2$ is a solution to $A\vec{x} = \vec{0}$, then $t\vec{x}$ is also a solution. (2 Points)

Q1

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Q2

Q3