Linear Algebra, EE 10810/EECS 205004

Quiz 5.4 – 6.1

Student ID: .....; Your Name: .....

(Dated: December 16th, 2020)

Integrity: There is NO space to cross the **Red Line** !!

1. For a matrix $\overline{\overline{A}} = \begin{pmatrix} 3 & -10 \\ 1 & -4 \end{pmatrix}$, find the solutions of $\vec{x}$ to the following system of differential equations:

$$\frac{d}{dt}\vec{x} = \overline{\overline{A}}\vec{x}. \tag{1}$$

2. Apply the Gram-Schmidt process to the given subset S of the inner product space $\mathcal{V}$ to obtain an orthonormal basis for span(S)

$$\mathcal{V} = \mathcal{R}^3, \qquad S = \{(1,0,1),(0,1,1),(1,3,3)\} \tag{2}$$