UNGRADED ASSESSMENT 3, MATH 304-06, 11/18 YOUR NAME (OPTIONAL)

(1) (0 points) What is the Solar System?

(2) (10 points) A basis for $\mathbb{R}^3$ is $\mathcal{B} = \left\{ \begin{bmatrix} 1 \\ 2 \\ 1 \end{bmatrix}, \begin{bmatrix} -2 \\ 1 \\ 0 \end{bmatrix}, \begin{bmatrix} 1 \\ 1 \\ -3 \end{bmatrix} \right\}$. Turn it into an orthogonal basis using Gram–Schmidt.

(3) (10 points) Diagonalize $\begin{bmatrix} 2 & 3 \\ 7 & -2 \end{bmatrix}$, if possible. Remember that this means either to find D (diagonal matrix) and P, or to show they do not exist. Do not do extra work.