MTH 266, Quiz #9, Fall 2018 Name _____

Instructions: Show all work. Use exact answers unless otherwise asked to round.

1. Find a basis for the space spanned by the vectors $\left\{\begin{bmatrix}9\\3\\2\\1\end{bmatrix}, \begin{bmatrix}-1\\4\\2\\-3\end{bmatrix}, \begin{bmatrix}0\\1\\1\\-1\end{bmatrix}, \begin{bmatrix}7\\5\\3\\2\end{bmatrix}\right\}$.

2. Given the basis $\{2-t, t+t^2, 3t^2-t^3, 1+4t^3\}$ for P_3, find the representation of $p(t) = 5t^2 - 3t + 17$ in this basis. Clearly label your change of basis matrix and correct notation for each vector used.