ECE386 Homework3

Q1) A system is given by the formula

$$\dot{x} = \begin{bmatrix} 1 & 0 \\ 1 & 2 \end{bmatrix} x + \begin{bmatrix} 1 \\ 2 \end{bmatrix} u \,,\; y = \begin{bmatrix} 1 & 1 \end{bmatrix} x$$

where x is the state vector u is the input an y is the output

a) Show that this system is controllable.
b) Show that using state feedback the pole locations of the system can be brought to $s_1=s_2=-1$.