$$\dot{\mathbf{x}} = \begin{bmatrix} \dot{x}_1 \\ \dot{x}_2 \end{bmatrix} = \begin{bmatrix} x_2 \\ -\dfrac{g}{\ell} \sin x_1 \end{bmatrix} + \begin{bmatrix} 0 \\ \dfrac{1}{m\ell^2} \end{bmatrix} \tau$$

$$\mathbf{y} = s(\mathbf{x})$$

$$s(\mathbf{x}) = \left\lfloor \frac{180}{\pi} x_1 \right\rfloor$$