Name: _____ Quiz 3 (RNN) Roll#: _____

Q: In this task, you are required to compute the forward pass for the subsequent time step of a Recurrent Neural Network (RNN), given the provided details.

1. Draw Architecture of RNN for this simple scenario where t=0 information is given and you are asked to compute for next time stamp i.e., t=1. Also mention dimensions of each component.
2. Compute Hidden State (h_t) for the next time Stamp, Use Tanh activation function?
3. Compute Output ($\hat{y}$) for the next time Stamp, Use Sigmoid activation function?

```
Weight for Input:
 [[4]
 [1]]
Weight for Hidden State:
 [[6 6]
 [1 4]]
Weight for Output:
 [[4 3]]
Bais for Input:
 [[6]
 [4]]
Bais for Ouput:
 [[4]]
Input: [[-0.56843908]]
Previous Context:  [[ 0.2357065 ]
 [-2.06228849]]
```

Important Formulas:

$$\tanh x = \frac{e^x - e^{-x}}{e^x + e^{-x}}$$

Sigmoid / Logistic

$$f(x) = \frac{1}{1 + e^{-x}}$$