8. There are certain functions with the following properties:

(i) To compute the function using a shallow network circuit, you will need a large network (where we measure size by the number of logic gates in the network), but (ii) To compute it using a deep network circuit, you need only an exponentially smaller network. True/False?
True
Correct

9. Consider the following 2 hidden layer neural network:

 $a_{2}^{[2]}$

 $a_3^{[2]}$

during backpropagation you need to know which activation was used in the forward

propagation to be able to compute the correct derivative.

False

point

point

 $x_2^{(i)}$

 $X_3^{(i)}$

Correct

 $W^{[1]}$ will have shape (3, 4)

 $b^{[1]}$ will have shape (3, 1)

 $W^{[2]}$ will have shape (3, 4)

Un-selected is correct

Un-selected is correct

Yes. More generally, the shape of $W^{[l]}$ is $(n^{[l]}, n^{[l-1]})$.

 $W^{[1]}$ will have shape (4, 4)

Which of the following statements are True? (Check all that apply).

Correct Yes. More generally, the shape of $W^{[l]}$ is $(n^{[l]},n^{[l-1]})$. $b^{[2]} \ \ \text{will have shape (1, 1)}$ Un-selected is correct

 $b^{[2]}$ will have shape (3, 1) Correct Yes. More generally, the shape of $b^{[l]}$ is $(n^{[l]},1)$.

 $W^{[3]}$ will have shape (3, 1)

 $b^{[3]}$ will have shape (1, 1)

 $W^{[3]}$ will have shape (1, 3)

 $W^{[l]}$ has shape $(n^{[l-1]}, n^{[l]})$

 $W^{[l]}$ has shape $(n^{[l+1]}, n^{[l]})$

 $W^{[2]}$ will have shape (3, 1)

Un-selected is correct

Un-selected is correct

Correct

Correct Yes. More generally, the shape of $b^{[l]}$ is $(n^{[l]},1)$.

Yes. More generally, the shape of $W^{[l]}$ is $(n^{[l]}, n^{[l-1]})$. $b^{[3]} \ \ \, \text{will have shape (3, 1)}$ Un-selected is correct

10. Whereas the previous question used a specific network, in the general case what is the dimension of W^{[l]}, the weight matrix associated with layer l? $W^{[l]} \text{ has shape } (n^{[l]}, n^{[l-1]})$ Correct True $W^{[l]} \text{ has shape } (n^{[l]}, n^{[l+1]})$

point