



Computational Graph
8 Questions

NAME : _____

CLASS : _____

DATE : _____

1. The computational graph is a directed graph which is used for evaluating the mathematical expression.

☐ A True

☐ B False

2. The structure of the Computation Graph includes nodes, edges and operation.

☐ A False

☐ B True

3. What is the node's value?

☐ A Tensor

☐ B Matrix

☐ C Vector

☐ D Scalar value

4. Fill in the blank:

Forward propagation loop over nodes in order compute the value of the node given its inputs.

5. Fill in the blank:

Backward propagation loop over the nodes in order starting with a final goal node.

6. What is output J?



☐ A $J = (c - 1) * (b + a)$

☐ B $J = (b - 1) * (c + a)$

☐ C $J = a * b + b * c + a * c$

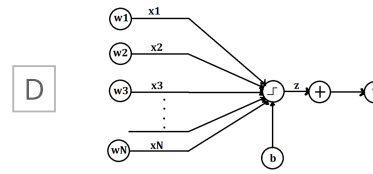
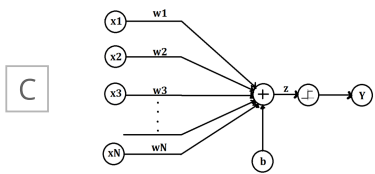
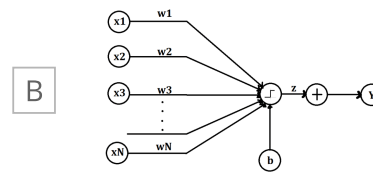
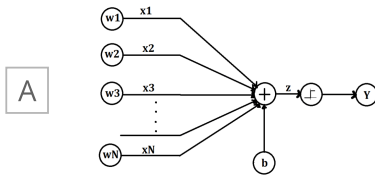
☐ D $J = (a - 1) * (b + c)$

7.

$$z = \sum_i w_i x_i + b$$

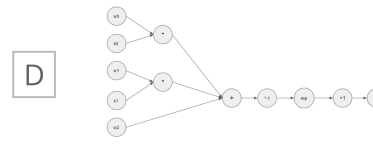
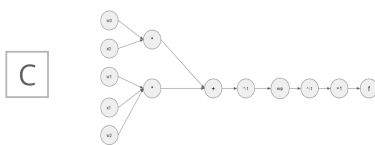
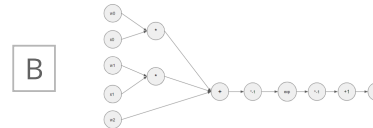
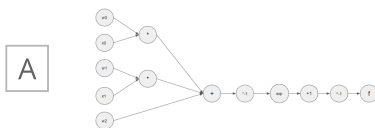
$$y = \begin{cases} 1 & \text{if } z \geq 0 \\ 0 & \text{else} \end{cases}$$

Which is computational graph of this mathematical expression?



8.

$$\text{Which is computational graph of } f(w, x) = \frac{1}{1 + e^{-(w_0 x_0 + w_1 x_1 + w_2 x_2)}}$$



Answer Key

- | | | | |
|------------------------|------|---------------|---------|
| 1. a | 2. a | 3. a, b, c, d | 4. topo |
| 5. reverse topological | 6. d | 7. c | 8. a |