

## Quiz 10

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### Q1

Every undirected and weighted graph has spanning trees.

**Answer:** False

### Q2

If a graph has a minimum spanning tree, it must be unique.

**Answer:** False

### Q3

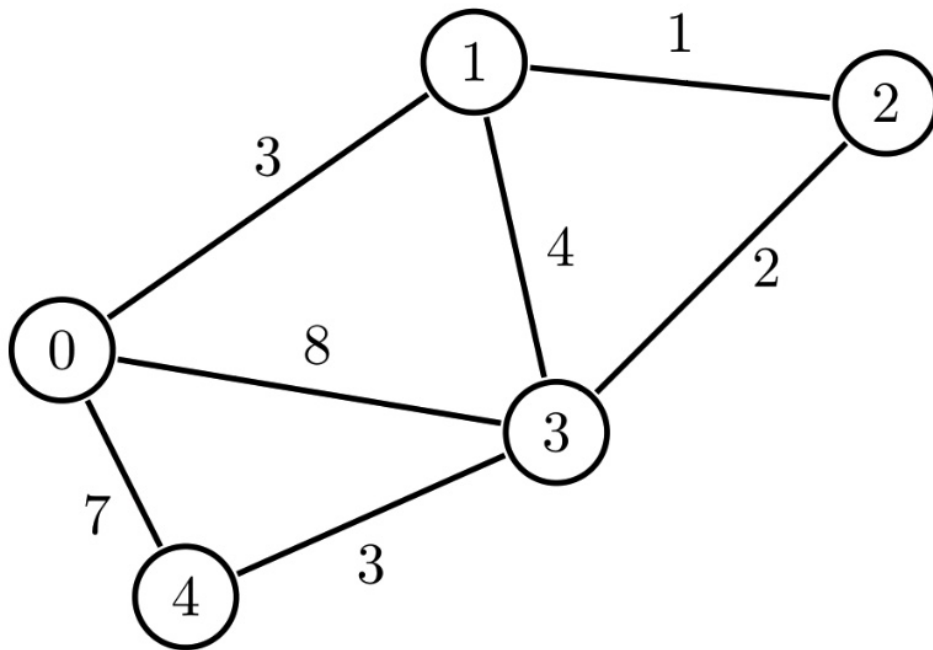
If a graph with  $n$  vertices and  $m$  edges has a minimum spanning tree, then the tree has \_\_\_\_ number of edges.

**Answer:**  $n - 1$

### Q4

Use Prim's algorithm to find a MST tree for the following graph. Suppose the initial vertex is vertex 0. Select all edges that are in the resulting tree.

Since it is an undirected graph, we say  $(u, v)$  is the same as  $(v, u)$ .



**Answer:**  $(0, 1), (1, 2), (2, 3), (3, 4)$