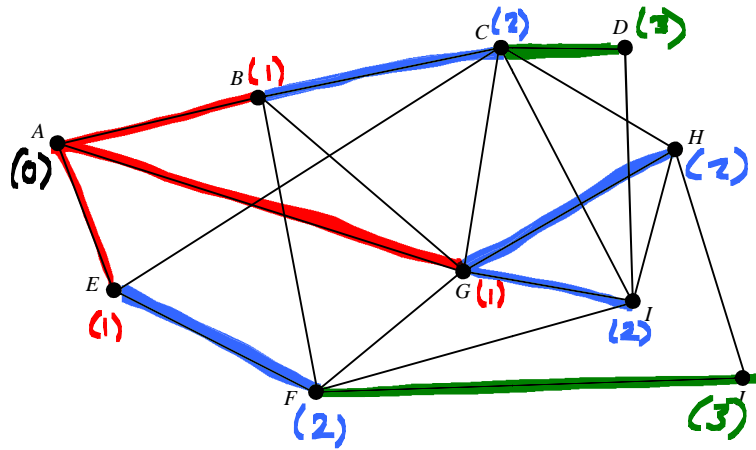
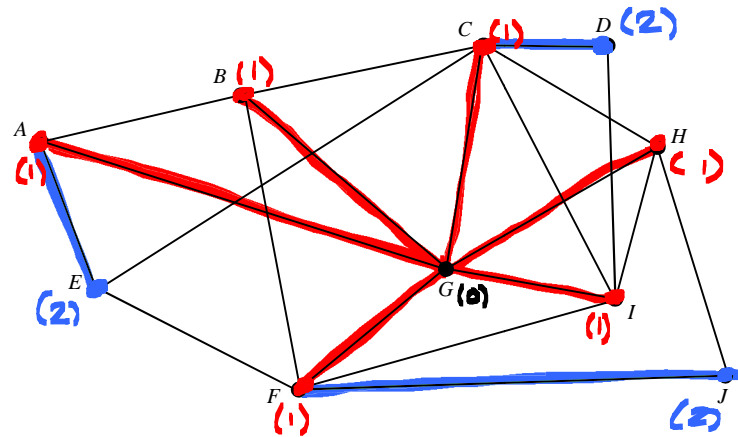


1. Create a spanning tree using the breadth-first search algorithm. Start at **A** (i.e. 0) and label each vertex with the correct number after A and show your path.



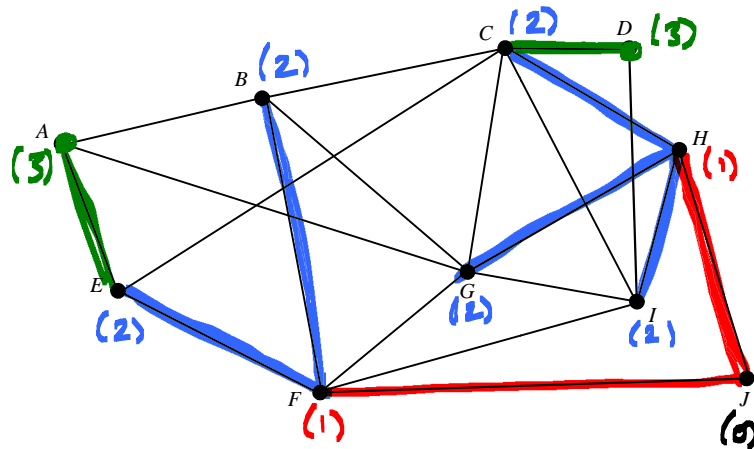
How many edges were used to create a spanning tree? $3 + 4 + 2 = 9$

2. Create a spanning tree using the breadth-first search algorithm. Start at **G** (i.e. 0) and label each vertex with the correct number after A and show your path.



How many edges were used to create a spanning tree? $6 + 3 = 9$

3. Create a spanning tree using the breadth-first search algorithm. Start at **J** (i.e. 0) and label each vertex with the correct number after J and show your path.

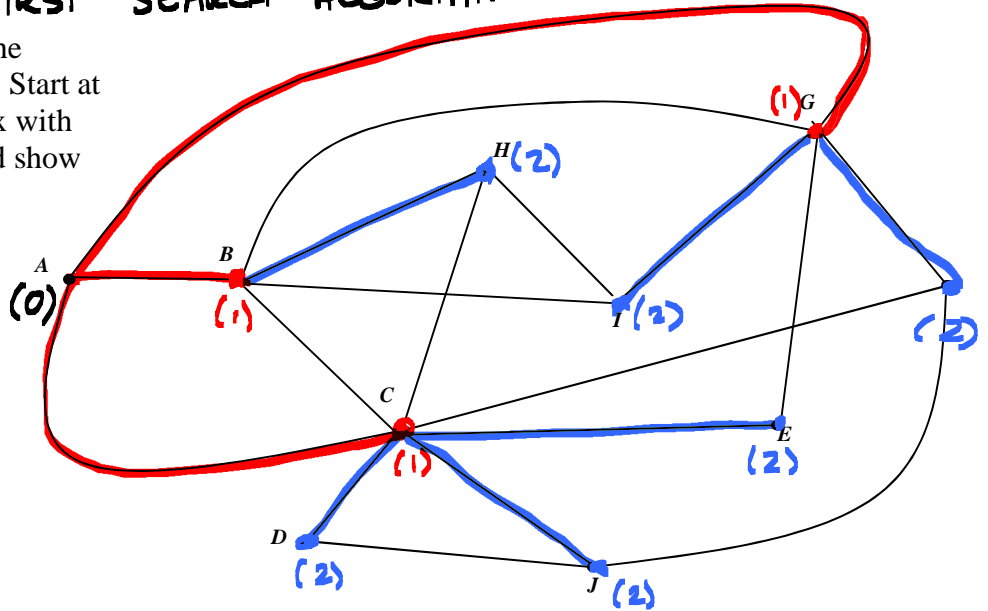


How many edges were used to create a spanning tree?

$$2 + 5 + 2 = 9$$

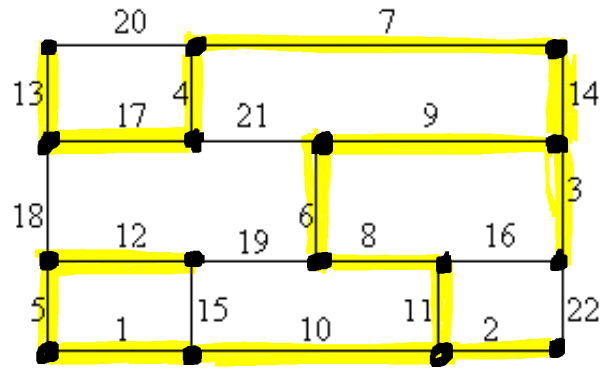
BREADTH - FIRST SEARCH ALGORITHM

4. Create a spanning tree using the breadth-first search algorithm. Start at A (i.e. 0) and label each vertex with the correct number after A and show your path.



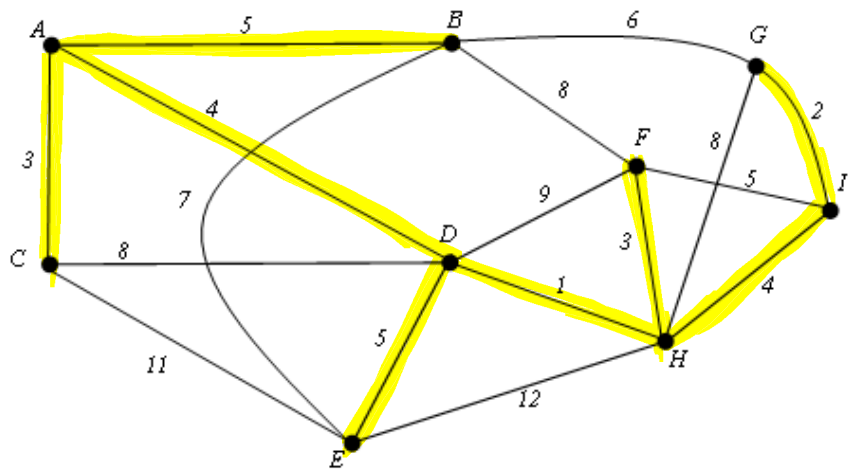
$$3 + 6 = 9$$

5. The minimum cost spanning tree found using Kruskal's algorithm for the following graph has a cost of ____.



$$1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 + 11 + 12 + 13 + 14 + 17 = 122 \text{ TOTAL COST}$$

6. Create a minimum spanning tree using the Kruskal's algorithm. What is the total minimum length of the spanning tree? 27



$$1 + 2 + 3 + 3 + 4 + 4 + 5 + 5 = 27 \text{ TOTAL COST}$$