A graph on 6 vertices has 11 edges. Prove that this graph is connected.

The minimum edge number in this problem: 6 -1 = 5. The maximum edges number in this problem is 6 \* 5 / 2 = 15. As long as the number of edges greater than 5 \* 4 / 2 = 10. The graph is connected. In this case, 11 edges are greater than 10. Hence, we get our desired output.