Undirected Graph.

Total nodes = Random variables = M

As the graph is undirected there could be a link between each node pair. Total number of links would be $M \times (M-1)$.
As this is an undirected graph each node M could be connected to any of the other nodes $(M-1)$.
We need distinct links, therefore consider Node X and Node Y. As it is undirected there is a link from X to Y and Y to X which is being counted twice. TO get distinct links we would do $\frac{M \times (M-1)}{2}$

Number of distinct undirected graph would be 2 raised to the power of distinct links. that is:

$$2^{\frac{M \times (M-1)}{2}}$$

8 possibilities for $M = 3$ are :-