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Describe a rotation in N dimensions:

A) Prove that the set of all rotations in N dimensions form a group.

B) Discuss small rotations in dimensions describe the matrix generators in N dimensions - i.e. how many independent generators exist and what commutation relations do they satisfy?

②

Do the same as above for the Lorentz group in 4 dimensions

(infinitesimal)

3. Show how the Lorentz group can be regarded as being composed of two rotation groups and discuss what this