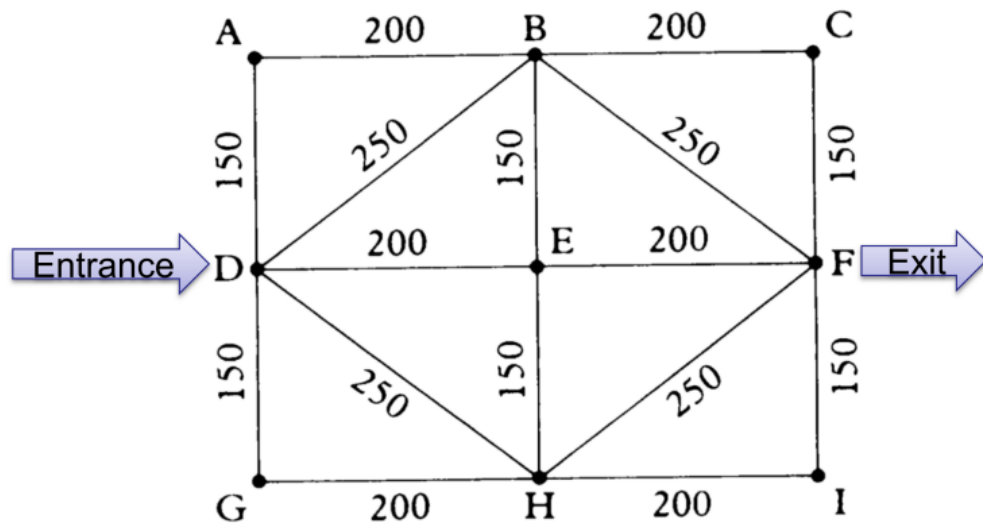


Assumptions: The tour group does not wander off the path.

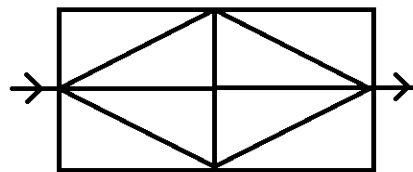
There is no extra distance not shown in the diagram.

There are no short-cuts.

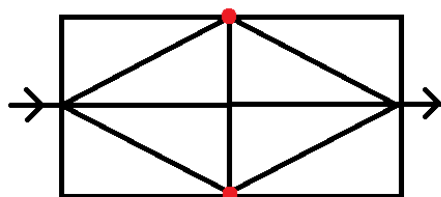
Model:



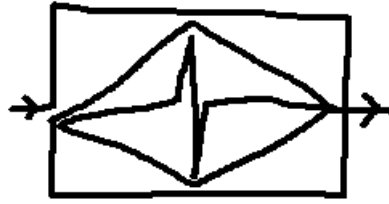
From the diagram above, we can simplify it as such:



From the diagram above, we can see 2 nodes where there are an odd number of paths leading to it:



Solution: For each node, there needs to be an even number of paths leading to and from it, such that a group tour can enter and exit, to proceed to the exit. As such, the group would need to pass by both highlighted nodes an extra time to make them even. Thus, the following is the approximate path that allows a group tour to cover all paths at a minimal distance:



As such, the total distance that the tour group would need to cover will be $150 + 200 + 200 + 150 + 150 + 200 + 200 + 150 + 250 + 250 + 250 + 250 + 200 + 150 + 150 + 150 + 150 + 200 = 3400$ meters.

Discussion: It is important to assume that the tour group will follow the paths as shown on the diagram, as the model is based off it. If the tour group wanders off the paths, there will be extra distance covered, and the solution will not be accurate. Likewise, we have to assume that there is no extra distance covered at the entrance or exit, and that there are no shortcuts that the group can take that are beyond the given paths, or the model would be inaccurate.