

## Museum Practice Task

Time to get between areas in Minutes

Entrance Lobby							
2	Maori	Early European	Wildlife	Science	Childrens	Transport	Architecture
5	...	1	2	...	8	...	
7	...	3	...	7	1		
...	...	...	...	...	...		
...	...	...	...	...	...		
...	...	...	...	...	...		
...	5	4	...	3	...		
3	...	...	...	...	...		

Cost to put in audio wiring in hundreds of \$.

Entrance Lobby							
3	Maori	Early European	Wildlife	Science	Childrens	Transport	Architecture
4	...	2	3	...	7	...	
6	...	4	...	8	2		
...	...	...	...	...	...		
...	...	...	...	...	...		
...	9	5	...	4	...		
4	...	...	...	...	...		

1) In order to keep the children interested it is best to start with the Childrens section. What is the quickest way to get to the Childrens section from the Lobby?

2) There are answers to the childrens quiz along the corridors:

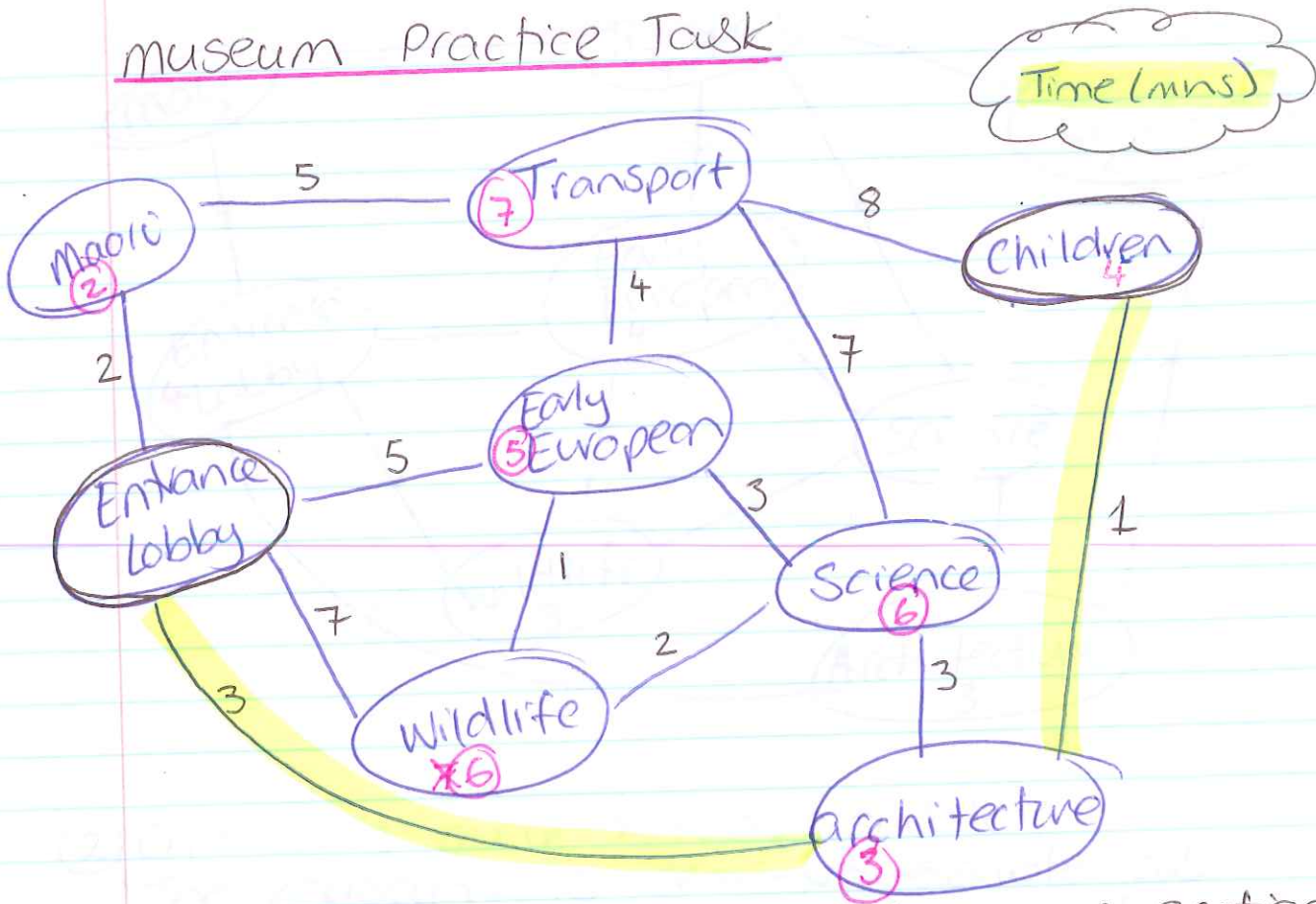
- Is it possible to go along every corridor of the museum without repeating any of them? If so how?
- Is it possible to go along every corridor of the museum without repeating any of them starting and finishing at the Lobby?

3) The museum want to put in an audio link connecting all the sections. They need to run a wire along the corridors to do this. What is the cheapest way to connect all the sections.

# Networks Milford Pass National Park

Milford Pass National Park is a national park in South Island which has several Department of Conservation huts that are linked by paths.

## Museum Practice Task



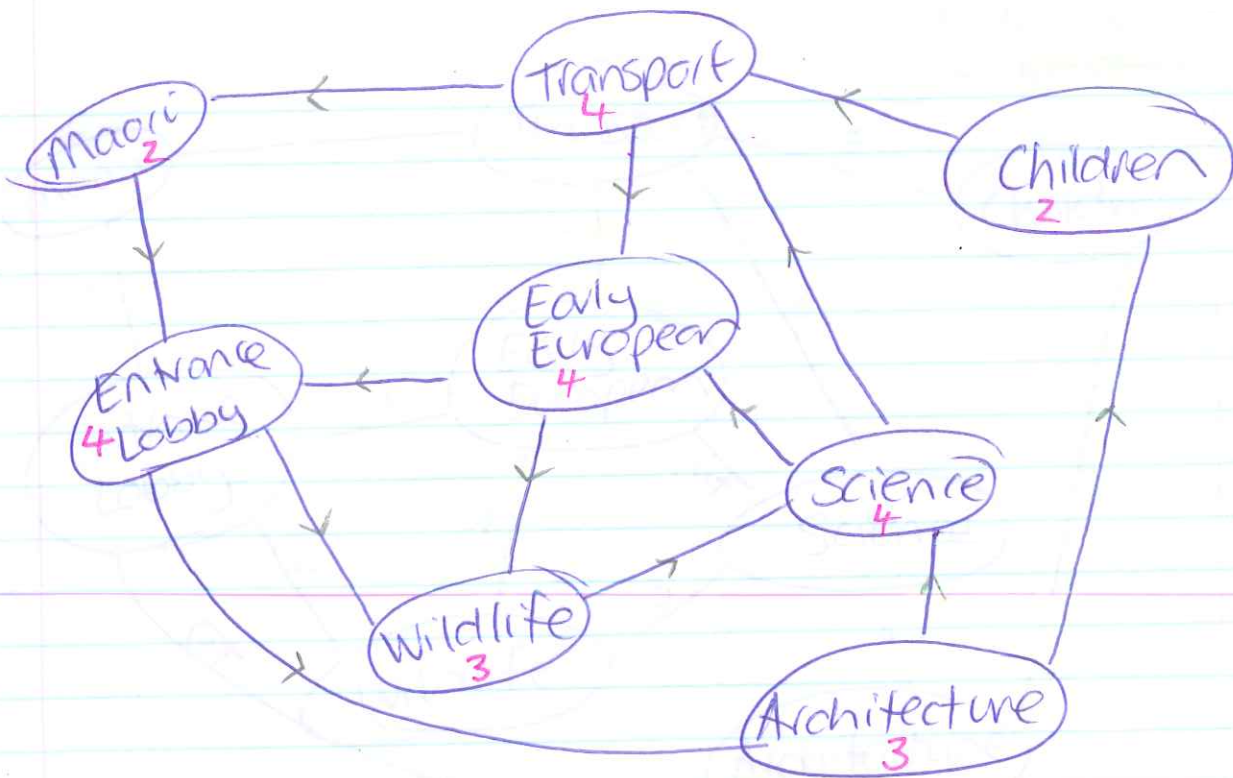
- ① Quickest way from Lobby to Children's section  
→ Shortest path

The quickest way from the Lobby to the Children's section is through the Architecture section & takes 4 mins. Any other route would be through the Transport section, and as it takes 8 mins from there to the children's section, all routes will take longer than through Architecture.



# Networks Milford Pass National Park

Milford Pass National Park is a national park in South Island which has several Department of Conservation huts that are connected by a network of paths.



② Children's quiz → traversable?

- (a) The museum is semi-traversable as  
 (b) two of the sections have an odd number of corridors/paths coming out of them (wildlife & Architecture).

To go along every corridor without repeating any the children will have to start at wildlife section or Architecture section and finish at the other.

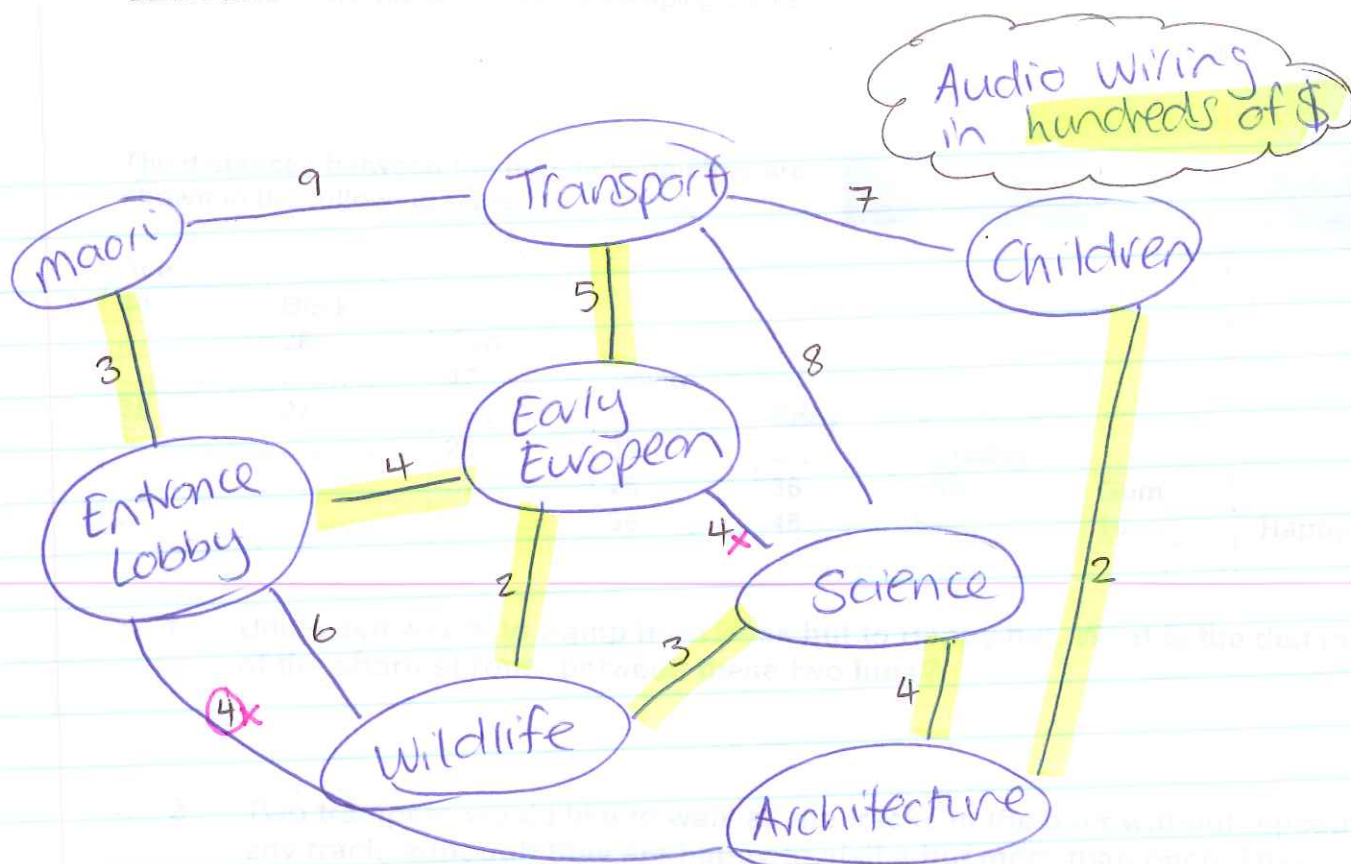
For example:

Architecture → science → E. European → E. Lobby  
 → wildlife → science → transport → Maori  
 → E. Lobby → Architecture → Children → transport  
 → E. European → wildlife.

③ It is not possible to go along every corridor starting and ending at the Lobby. For this to happen every section needs an odd number of corridors → a corridor between wildlife & Architecture would need to be built.

## Networks Milford Pass National Park

Milford Pass National Park is a national park in South Island which has several Department of Conservation huts that are linked by a network of paths.



- ③ Audio link to all sections in cheapest way  
 → minimum spanning tree.  
 Cheapest way to connect all sections  
 with an audio link is \$2300, as  
 shown above.

corridors selected in the following order (from cheapest)

- ① E. European - Wildlife (2)
- ② Children - Architecture (2)
- ③ Maori - E. Lobby (3)
- ④ Wildlife - Science (3) ← ⑤ Maori - E. Lobby (3)
- not science - E. European (4) as makes circuit.
- ⑥ Science - Architecture (4)  
 or E. Lobby - Architecture (4) as both same cost
- ⑦ Transport - E. European (5)