

TRAVERSABLE NETWORKS

EX 10 D

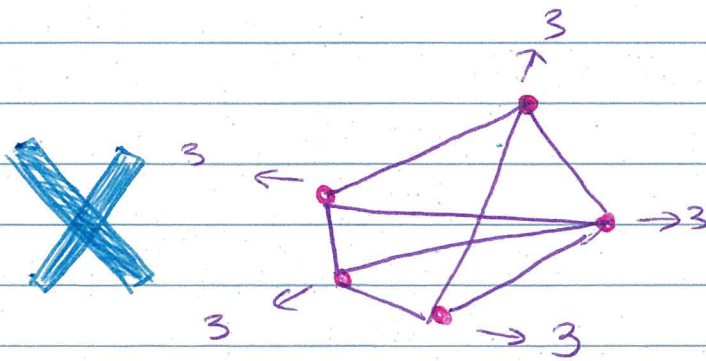
A network is traversable if you can find a route through that network that uses **ALL** edges **ONLY ONCE**

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How do I check if it is traversable...?
Excellent question

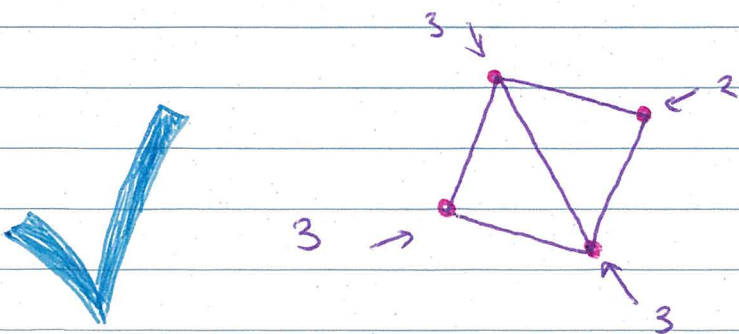
must be : connected
AND → all vertices are even degree
OR
2 vertices are odd degree and rest are even.

* If a network has > 2 vertices of odd degree it is **NOT** traversable *



all 5 vertices are degree 3 (an odd number)

∴ not traversable



• exactly 2 vertices are odd

• rest are even

∴ is traversable

EULER PATHS

EX 10E

↳ defined as passing along EVERY EDGE in connected network BUT ONLY ONCE

Note: all traversable networks have an Euler Path (or more than 1!)

EULER CIRCUITS

↳ this is an Euler Path that finishes where it started (i.e. same vertex)

Think of a postman or delivery man; they want to minimise any doubling up.

Conditions: MUST BE CONNECTED

* Path not Circuit - 2 vertices odd
- rest even

* Circuit - all vertices even