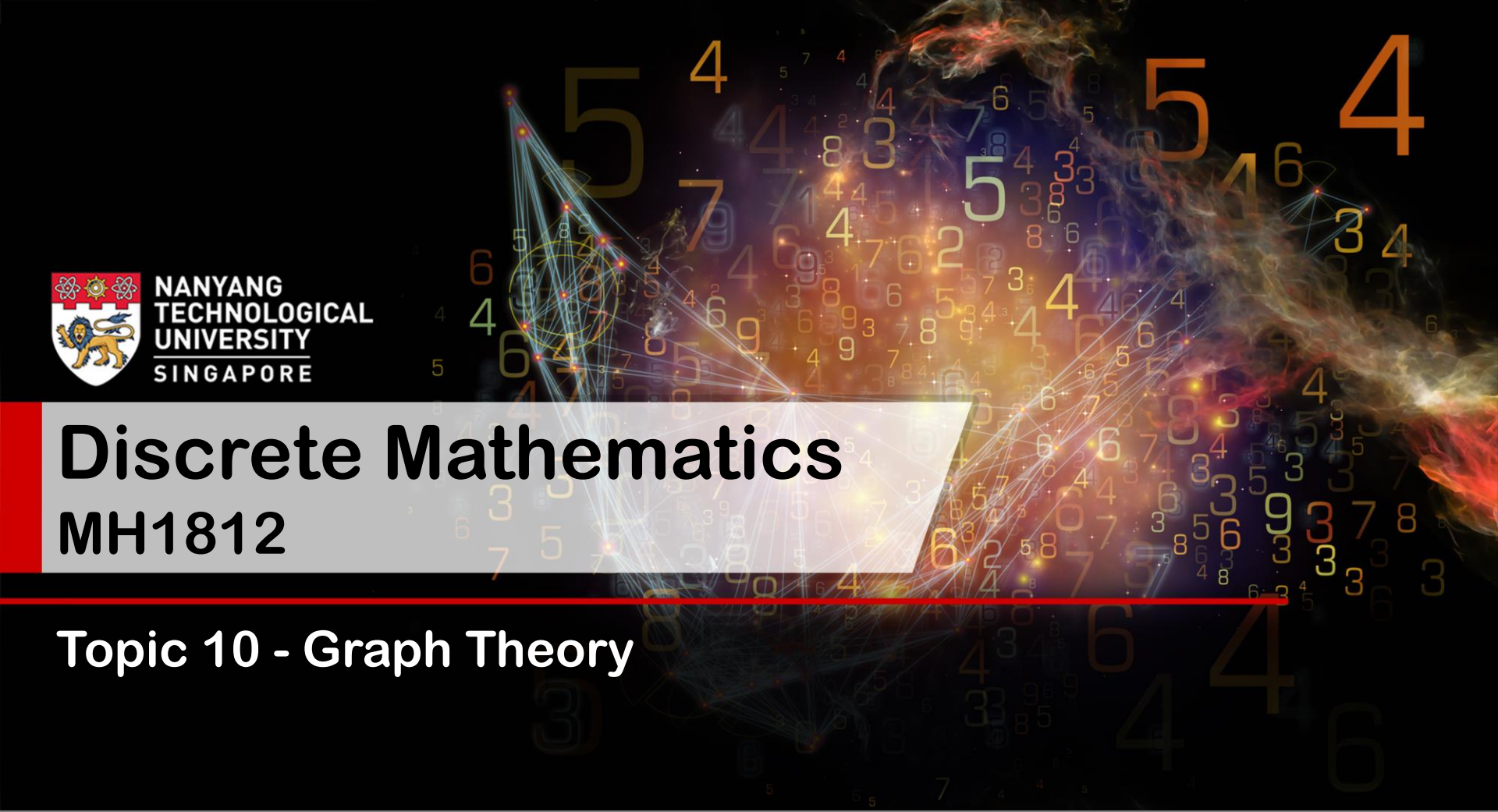


NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

Discrete Mathematics

MH1812

Topic 10 - Graph Theory

(a) Is the following graph shown on Figure 1 bipartite? Justify your answer.

(b) Does the following graph shown on Figure 1 contain an Euler path? Justify your answer.

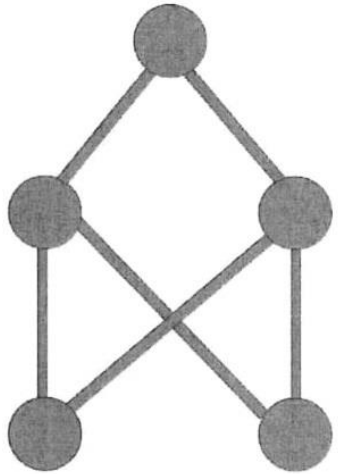
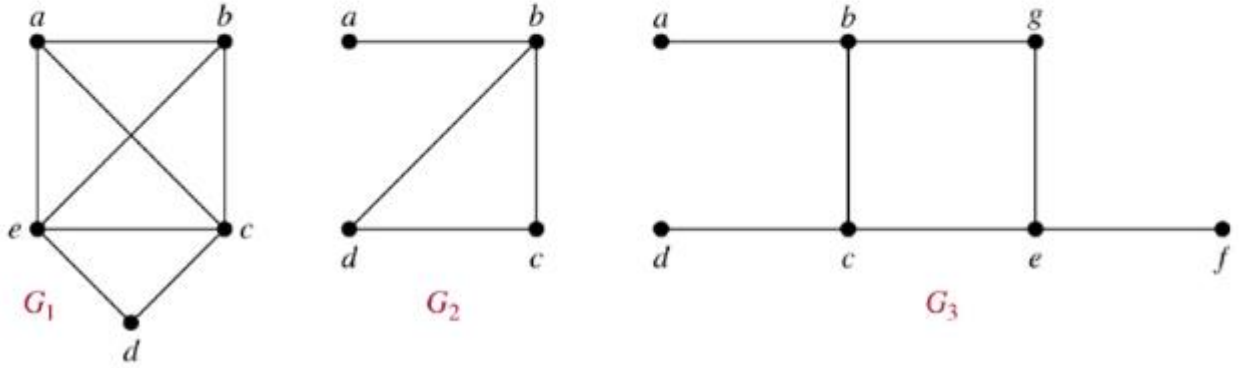


Figure 1: Graph

Find the Euler path, Euler circuit, Hamilton path, and Hamilton circuit of the following graphs (with a and b as starting and ending points for paths), if any.



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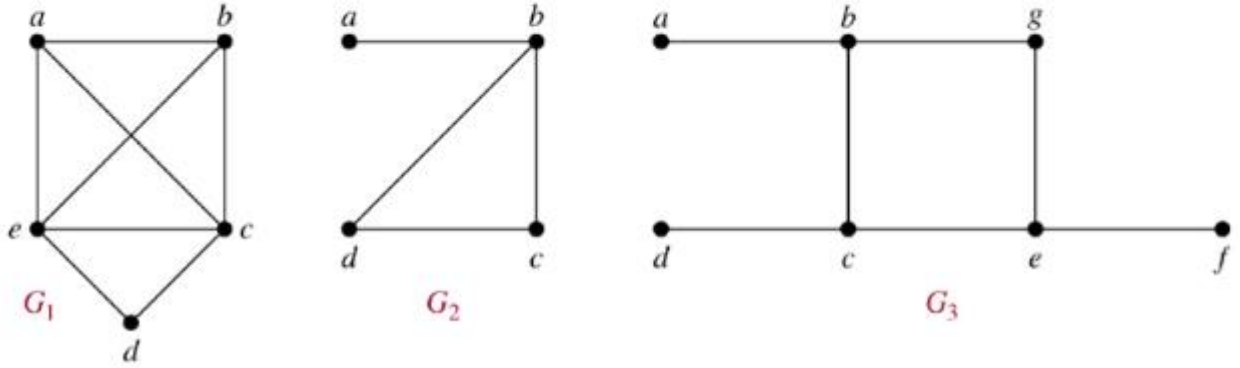
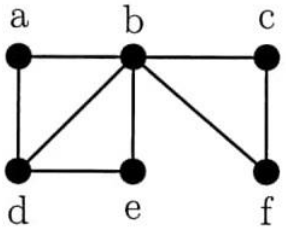


QUESTION 3.

(a) Let A, B, and C be sets, show $(B - A) \cup (C - A) = (B \cup C) - A$. **(10 marks)**

(b) Refer to the graph below, find Euler Path, Euler Circuit and Hamilton Circuit if any, justify your answer if it does not exist. **(8 marks)**



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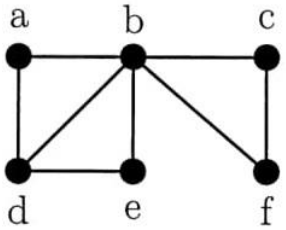
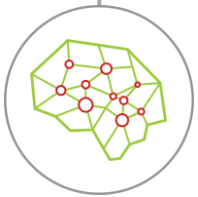


Your Learning Roadmap

1. Elementary Number Theory

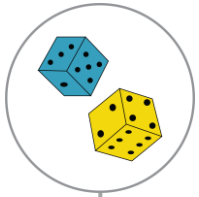
2. Propositional Logic



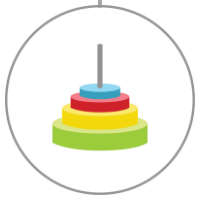
3. Predicate Logic

4. Proof Techniques

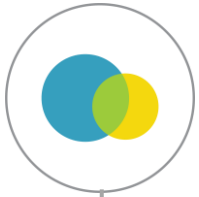
5. Combinatorics



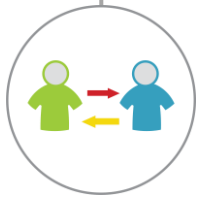
6. Linear Recurrence Theory



7. Set Theory



8. Relations



9. Functions

10. Graph Theory