

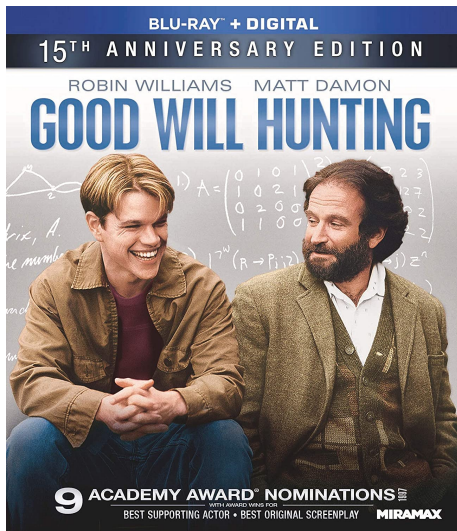
(十) 图论: 树 (Trees)

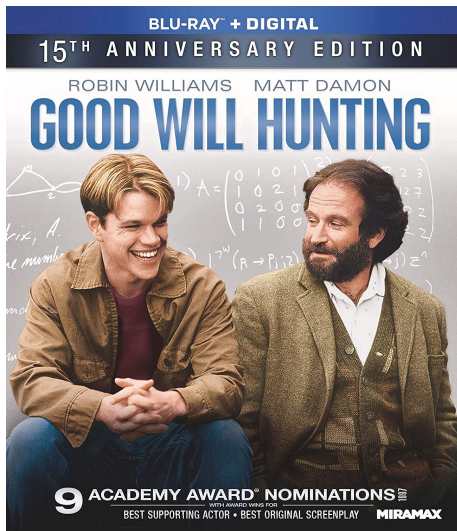
魏恒峰

hfwei@nju.edu.cn

2021 年 05 月 13 日







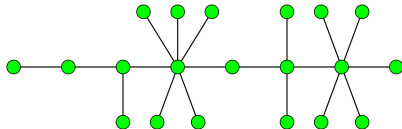
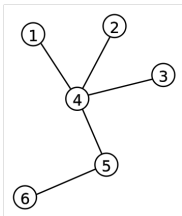
你, 真得, 看懂了吗?

Definition (Tree (树))

A **tree** is a **connected acyclic undirected** graph.

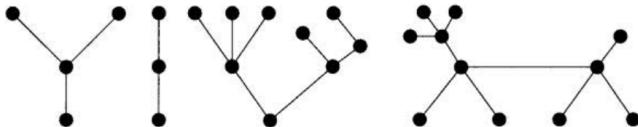
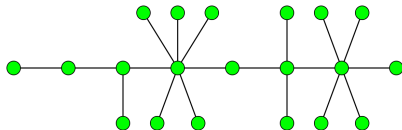
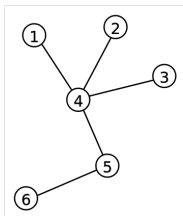
Definition (Tree (树))

A **tree** is a **connected acyclic undirected** graph.



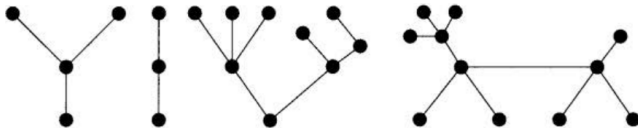
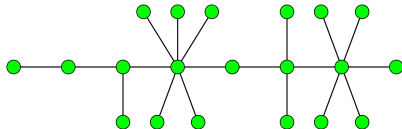
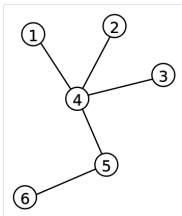
Definition (Tree (树))

A **tree** is a **connected acyclic undirected** graph.



Definition (Tree (树))

A **tree** is a **connected acyclic undirected** graph.



Definition (Forest (森林))

A **forest** is a **acyclic undirected** graph.



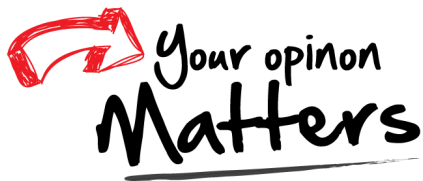
Theorem

Let T be an undirected graph with n vertices.

Then the following statements are *equivalent*:

- (1) T is a tree;
- (2) T is acyclic, and has $n - 1$ edges;
- (3) T is connected, and has $n - 1$ edges;
- (4) T is connected, and each edge is a *bridge*;
- (5) Any two vertices of T are connected by exactly one path;
- (6) T is acyclic, but the addition of any edge creates exactly one cycle.

Thank
You!



Office 302

Mailbox: H016

hfwei@nju.edu.cn