

$a^n + b^n = c^n$ no solutions for non-zero integers a, b, c $n > 2$

$3^2 + 4^2 = 5^2$ for 2 it works!

Eulerian path \leftarrow visit each ~~edge~~ edge exactly once

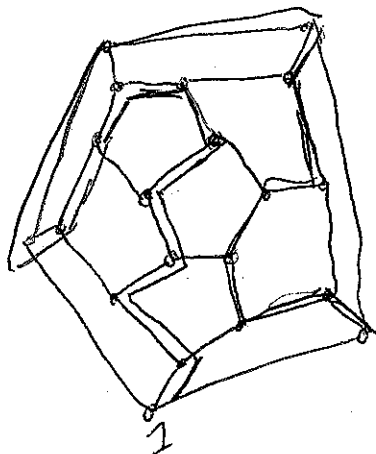
A graph has an EP iff the degree of all but at most 2 vertices is even.

Brute force algorithm:

\leftarrow $k^{\text{per num of nodes}}$

Hamiltonian Path

\leftarrow visit each vertex exactly once



a^n for some $a > 1$

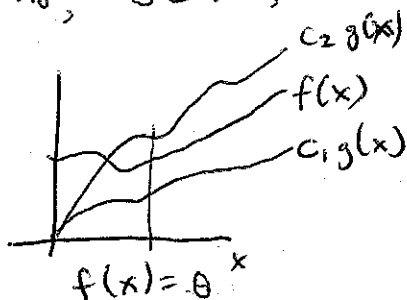
Preliminaries

Big O: $f(x) = O(g(x))$ iff

$\exists x_0, \exists c > 0$, s.t. $|f(x)| \leq c|g(x)|$ for $x > x_0$

Big Ω :

Big Θ :



Preliminaries

Logic:

Quantifier \exists there exists

\forall for all

De Morgan's Theorem:

$$\neg(\phi_1 \vee \phi_2) \equiv (\neg\phi_1 \wedge \neg\phi_2)$$

$$\neg(\phi_1 \wedge \phi_2) \equiv (\neg\phi_1 \vee \neg\phi_2)$$

\wedge conjunction "AND"

\vee disjunction "OR"

\neg

$$\exists x \phi \text{ is equivalent to } \neg(\forall x \neg \phi)$$

$A \Rightarrow B$ if A then B

$A \Leftrightarrow B$ ~~iff~~ A iff B

A ¹ \Rightarrow and ² \Leftarrow B

① if B, A $B \Rightarrow A$

② A only if B

This thing is a dog only if it is an animal

A

B

$$A \Rightarrow B$$

A	B	$A \Rightarrow B$
T	T	T
T	F	F
F	T	T
F	F	T

$$A \Rightarrow B$$

$$\neg A \vee B$$

$$\neg B \Rightarrow \neg A$$