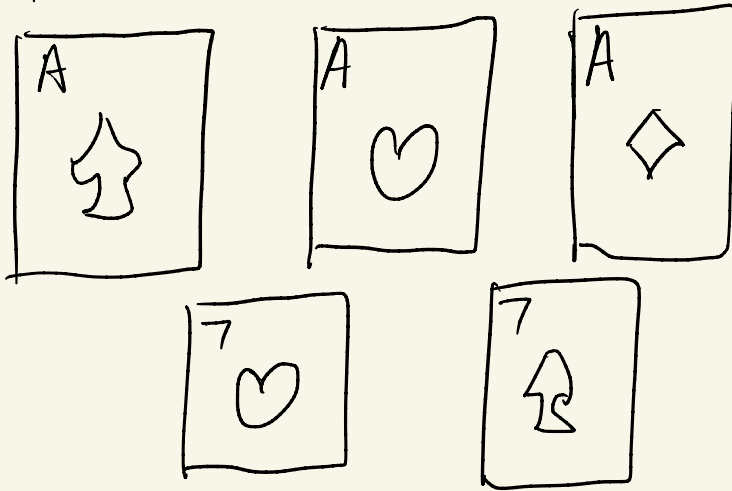


COMP 2012 Quiz 2
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Q1:

(a) (i):



(ii)

$\binom{4}{3} = 4$ ways to choose 3 cards are same.

$\binom{4}{2} = 6$ ways to choose 2 cards are same.

pick the type of 3: $\binom{13}{1} = 13$

pick the type of pair: $\binom{12}{1} = 12$

$\binom{13}{1} \binom{4}{3} \binom{12}{1} \binom{4}{2} = 3744$ patterns

1(b),

extracted vertices:

$$Q = (A:0), (B:\infty), (C:\infty), (D:\infty), (E:\infty), (F:\infty)$$

$$Q = (B:3), (C:\infty), (D:\infty), (E:\infty), (F:\infty)$$

$$Q = (C:4), (D:\infty), (E:\infty), (F:\infty)$$

$$Q = (D:11), (E:\infty), (F:\infty)$$

$$Q = (E:6), (F:\infty)$$

$$Q = (F:11)$$

Extracted vertices (in order): A B C E D F / A B C E F D

1(c),

A to F: A → C → E → F

Q2:

2(a),

	A	B	C	D	E	F
A	0	1	0	1	0	0
B	1	0	1	1	0	0
C	0	1	0	0	1	0
D	1	1	0	0	1	1
E	0	0	1	1	0	1
F	0	0	0	1	1	0

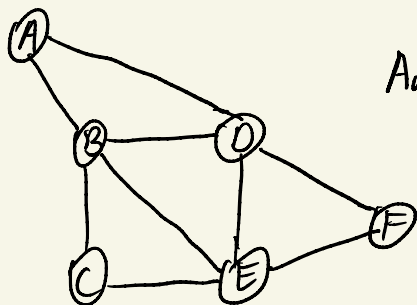
2(b).

Yes, it have euler path:

Only B and E have euler path.

B to C to E to D to B to A to D to F to E.

2(c).



Add an edge in B and E.

So: A to B to C to E to F to D to E to B to A

