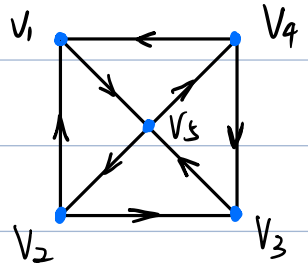
习题14.

45.



$$A=\begin{bmatrix}0&0&0&0&1\\1&0&1&0&0\\0&0&0&0&1\\1&0&1&0&0\\0&1&0&1&0\end{bmatrix}\qquad B^4=\begin{bmatrix}2&1&2&1&5\\5&2&5&2&2\\2&1&2&1&5\\5&2&5&2&2\\2&5&2&5&4\end{bmatrix}$$

$$A^2=\begin{bmatrix}0&1&0&1&0\\0&0&0&0&2\\0&1&0&1&0\\0&0&0&0&2\\2&0&2&0&0\end{bmatrix}\quad A^3=\begin{bmatrix}2&0&2&0&0\\0&2&0&2&0\\2&0&2&0&0\\0&2&0&2&0\\0&0&0&0&4\end{bmatrix}\quad A^4=\begin{bmatrix}0&0&0&0&4\\4&0&4&0&0\\0&0&0&0&4\\4&0&4&0&0\\0&4&0&4&0\end{bmatrix}$$

(1) $a'_{2,5}=0$

$a^2_{2,5}=2$

$a^3_{2,5}=0$

$a^4_{2,5}=0$

(2) $a'_{5,5}=0$

$a^2_{5,5}=0$

$a^3_{5,5}=4$

$a^4_{5,5}=0$

(3) $\sum a^4_{ij}=32$

(4) $\sum b^4_{ii}=12$

(5). $P=AVA^2VA^3VA^4$

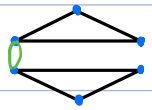
$$=\begin{bmatrix}1&1&1&1&1\\1&1&1&1&1\\1&1&1&1&1\\1&1&1&1&1\\1&1&1&1&1\end{bmatrix}$$

习题15.

1.

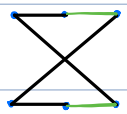
(a) 是

(b) 不是，2



(c) 是

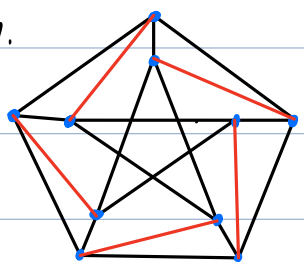
(d) 不是，2.



5.

K 条新边.

11.



至少加5条边方可变为欧拉图.