

CS 510 HW2.

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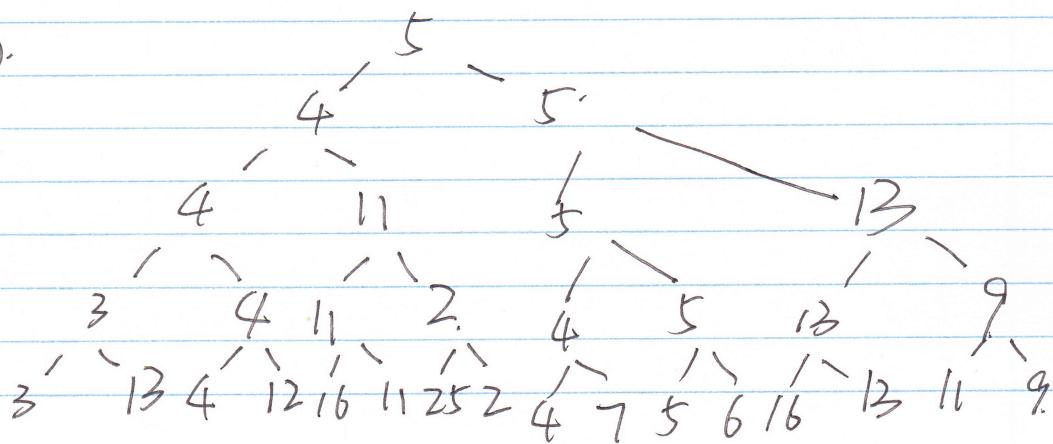
1. (a) # of neighbors: ${}^5C_2 = 10$
- (b) $5! = 120$.

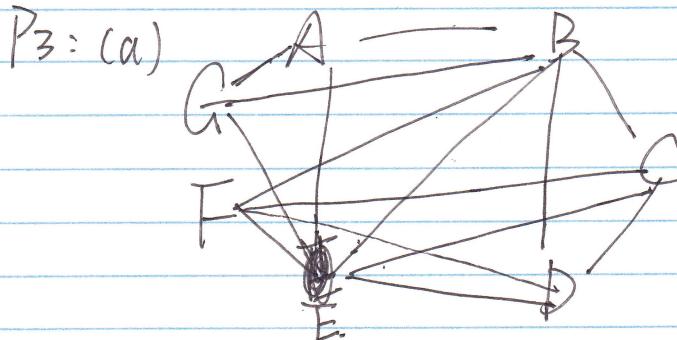
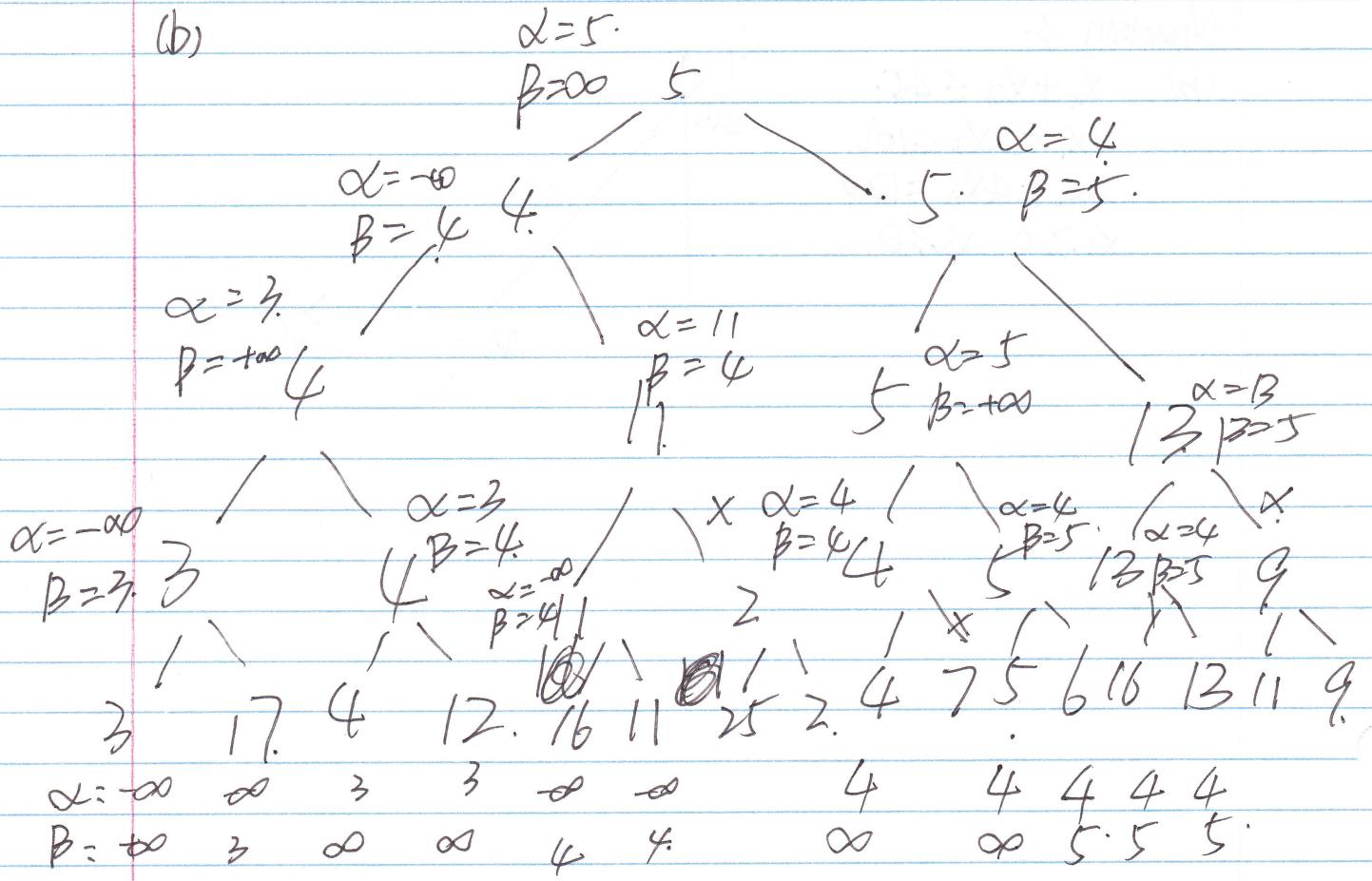
(c) 1st iteration	2nd iteration
ADCBE	DCDABEB $\xrightarrow{④} \star$ ADCEB $\textcircled{2}$
CDABE $\xrightarrow{②}$ BDAEC $\textcircled{3}$	BDAEC $\textcircled{5}$
CA D BE $\textcircled{2}$	CAEB $\textcircled{3}$
CB A DE $\textcircled{2}$	CBAED $\textcircled{4}$
CD AEB $\textcircled{4}$	CDABE $\textcircled{2}$
CD A BAE $\textcircled{3}$	CDBEA $\textcircled{3}$
CD EBA $\textcircled{3}$	CDEAB $\textcircled{3}$
CEABD $\textcircled{4}$	CEADB $\textcircled{3}$
DCABE $\textcircled{1}$	DCAEB $\textcircled{2}$
EDABC $\textcircled{3}$	EDACB $\textcircled{2}$

3rd	BAE BDAEC $\textcircled{5}$
	ADBE C $\textcircled{3}$
	BADEC $\textcircled{4}$
	B CAED $\textcircled{4}$
	B DACE $\textcircled{3}$
	B DCEA $\textcircled{3}$
	B DEAC $\textcircled{4}$
	BEADC $\textcircled{4}$
	CDAEB $\textcircled{4}$
	DBAEC $\textcircled{3}$
	EDABC $\textcircled{3}$

It will return ~~BDAEC~~ which has largest value.

2. (a).





(C)	0, 2	1, 2	2, 2
	X	1, 1	2, 1
0, 0	1, 0	X	

$$\begin{aligned}
 \text{for } A &= \{(0,0), (1,0), (0,1), (1,1), (2,2)\} \\
 C &= \{(0,0), (0,2), (2,1)\} \\
 D &= \{(0,0), (0,2), (2,2)\} \\
 E &= \{(0,0), (1,0), (0,1), (1,1), (2,2)\} \\
 F &= \{(0,0), (0,2), (2,1)\}.
 \end{aligned}$$

When $A \cap B \rightarrow (0, 0)$

$$A = \{(0, 0)\}$$

$$\partial C = \{(0, 2), (2, 2)\}$$

$$D = \{(0, 2), (2, 2)\}$$

$$E = \{(0, 0), (1, 0), (0, 2), (1, 2), (2, 2)\}$$

$$F = \{(0, 2), (2, 2)\}$$

Most constrained = E, D, F.

Most constraining = A.

Least constrained = (0, 0) (0, 2) (1, 2)

No, it won't.

~~Not~~:

(d) No. there's no enough space for small dogs

Alternative way:

