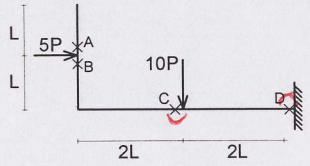
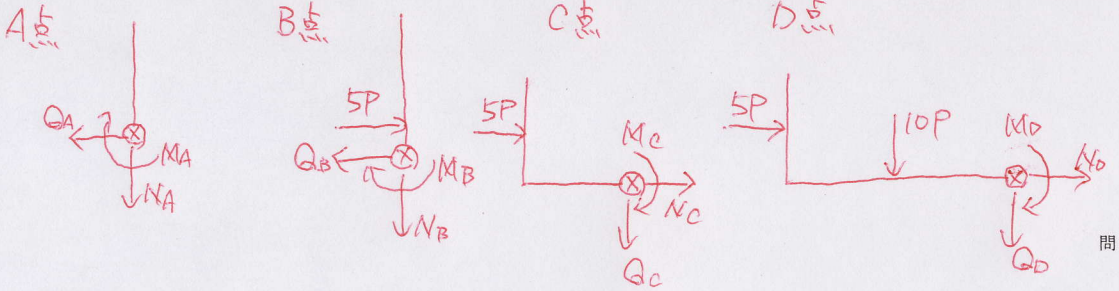
建築構造力学ⅠA・同演習 第5回 演習問題 実施日2012/05/16	学生証番号		氏名	解答	得点

問1　図中×印点での断面力（軸力N、せん断力Q、曲げモーメントM）を求めなさい。
なお、曲げモーメントにより部材が伸びる側に“)”を描きなさい。

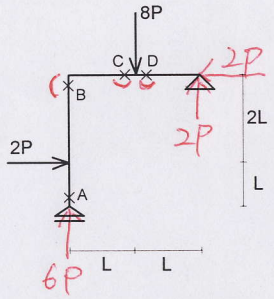
(1)



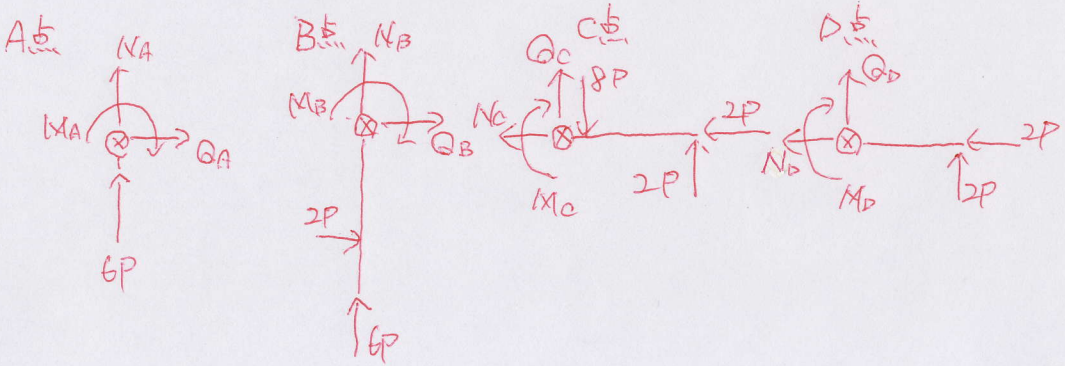
	N	Q	M
A	0	0	0
B	0	5P	0
C	-5P	0	5PL
D	-5P	-5P	15PL



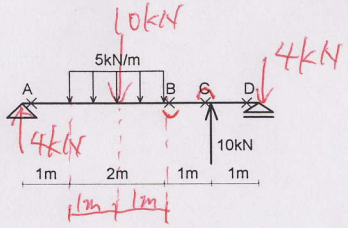
(2)



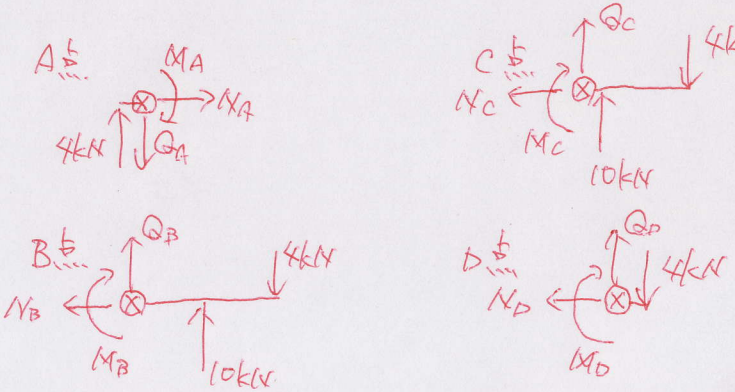
	N	Q	M
A	-6P	0	0
B	-6P	-2P	4PL
C	-2P	6P	2PL
D	-2P	-2P	2PL



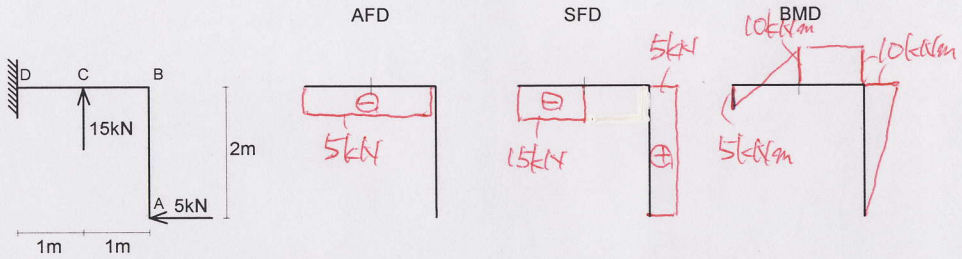
(3)



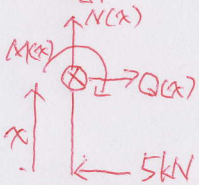
	N	Q	M
A	0	4	0
B	0	-6	2
C	0	-6	4
D	0	4	0
	(kN)	(kN)	(kNm)



問2　軸力図（AFD）、せん断力図（SFD）、曲げモーメント図（BMD）を図中に描きなさい。



AB間



$\Sigma X = Q(x) - 5kN = 0$

$\Sigma Y = N(x) = 0$

$\Sigma M = M(x) + 5x\,kNm = 0$

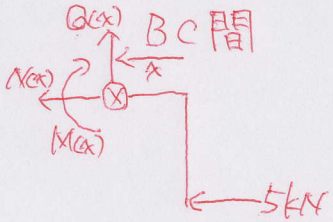
$N(x) = 0\,kN$

$Q(x) = 5\,kN$

$M(x) = -5x\,kNm$

$[x = 0 \sim 2]$

BC間



$\Sigma X = -N(x) - 5kN = 0$

$\Sigma Y = Q(x) = 0$

$\Sigma M = M(x) + 10kNm = 0$

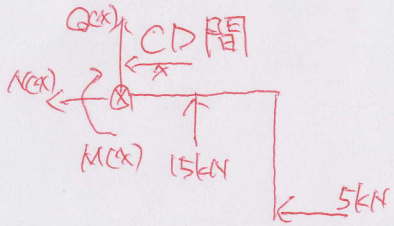
$N(x) = -5\,kN$

$Q(x) = 0\,kN$

$M(x) = -10\,kNm$

$[x = 0 \sim 1]$

CD間



$\Sigma X = -N(x) - 5kN = 0$

$\Sigma Y = Q(x) + 15kN = 0$

$\Sigma M = M(x) - 15x\,kNm + 10kNm = 0$

$N(x) = -5\,kN$

$Q(x) = -15\,kN$

$M(x) = 15x - 10\,kNm$

$[x = 0 \sim 1]$