Problem 1: $A_1 A_2 A_3 A_4 A_5 A_6$

matrix	dimesion
A_1	30X35
A_2	35X15
A_3	15X5
A_4	5X10
A_5	10X20
A_6	20X25

$A_1(A_2A_3) = 2625 + 30 \times 35 \times 5 = 7875$

$(A_1A_2)A_3 = 15750 + 30 \times 15 \times 5$

$(A_1 \times A_2 + (1,1) + (2,2))$ $A_1A_2A_3$

$m_{i,j}$

i \ j	1	2	3	4	5	6
1	0	15750	7875			
2		0	2625	4375		
3			0	750		
4				0	1000	
5					0	5000
6						0

$S_{i,j}$

i \ j	1	2	3	4	5	6
1	1	1	1			
2		2	2	3		
3			3	3		
4				4	4	
5					5	5
6						6

$A_1A_2A_3$

$(2\ 3)4 \Rightarrow 2625 + 35 \cdot 5 \cdot 10 = 4375$

$2(3\ 4) \Rightarrow 750 + 35 \cdot 15 \cdot 10 = 6000$

30X