Eclipse, Kliezl P. Exercise 10.4-1

Q: Consider an instance of the stable marriage problem given by the following ranking matrix:

	A	*B*	*C*
α	1, 3	2, 2	3, 1
β	3, 1	1, 3	2, 2
γ	2, 2	3, 1	1, 3

For each of its marriage matchings, indicate whether it is stable or not. For the unstable matchings, specify a blocking pair. For the stable matchings, indicate whether they are man-optimal, woman-optimal, or neither. (Assume that the Greek and Roman letters denote the men and women, respectively.)

A:

Men	Women	Men choice	Women choice		
α	A	1	3		
β	B	1	3		
γ	C	1	3	STABLE	man-optimal

Men	Women	Men choice	Women choice		
α	A	1	3		
γ	B	3	1		
β	C	2	2	UNSTABLE	(γ, A)

Men	Women	Men choice	Women choice		
γ	A	2	2		
α	B	2	2		
β	C	2	2	STABLE	neither

Men	Women	Men choice	Women choice		
γ	A	2	2		
β	B	1	3		
α	C	3	1	UNSTABLE	(α, B)

Men	Women	Men choice	Women choice		
β	A	3	1		
γ	B	3	1		
α	C	3	1	STABLE	woman-optimal

Men	Women	Men choice	Women choice		
β	A	3	1		
α	B	2	2		
γ	C	1	3	UNSTABLE	(β, C)