Regular Expression Assignment

1. For each if the following Regular Expressions (RE), decide which of the 4 REs accept the given word. Indicate yes if accepted and leave it blank for not accepted.

RE1: (ab*b*a) + (ab+b)

RE2: ∧ + (aa*b) + b

RE3: ((ab+ba) + [(aa+bb) (ab+ba)*(aa+bb)*])* (aa+bb) (ab+ba)*

RE4: (ab*a) + (ba*b)

	Word	RE1	RE2	RE3	RE4
1	∧				
2	a				
3	b				
4	aa				
5	ab				
6	aba				
7	abba				
8	bab				
9	baab				
10	abbb				

2. Tell where the following pairs of RE define the same language over the alphabet ∑ = {a,b}, if not equal, show strings that are not acceptable in RE1 but acceptable in RE2, or vice-versa.

	RE1	RE2	Equal or not, explanation:
1.	(ab)*a	a(ba)*	
2.	(a* + b)*	(a+b)*	
3.	(a* + b*)*	(a+b)*	
4.	(a*bbb)*a*	a*(ba*)*	
5.	((a + bb)*aa)*	∧ + (a +bb)*aa	

6.	(a+b)*a(a+b)*(a+b)*	(a+b)*ab(a+b)*	
7.	(a+b)*ab(a+b)* + b*a*	(a+b)*	
8.	(aa)*(Λ + a)	a*	