

$$2. a) b^+ a a^+ b a (a+b)^+$$

Any number of b's followed by 2 a's followed by any number of a's followed by one b then one a, followed by any number of a's and b's

$$b) \Delta + b(a+b)^+ + a a^+ b (b^+ + a a^+ b)$$

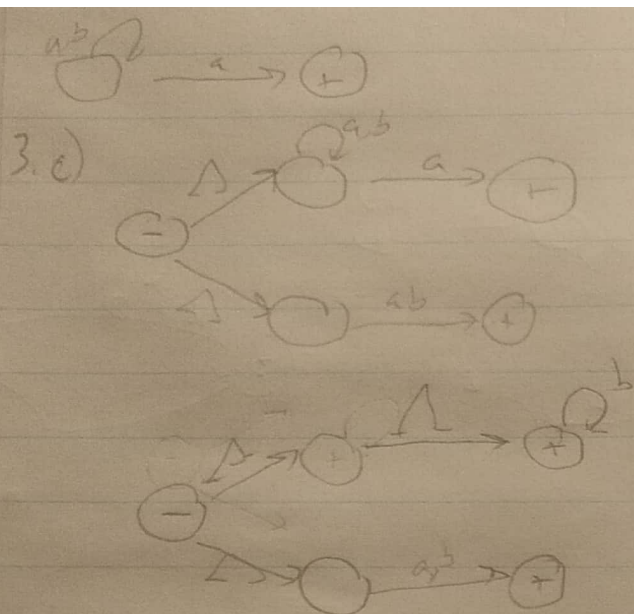
The empty string or anything that start with a b and ends with any letter ^(including the empty string) or anything that starts with an a followed by any number of a's follow by at least one b or followed by a, any number of a's then b.

Note: where any 'any number of a's' none is a possibility.

2. b) The first part is correct but which isn't necessarily best at either

Note when I say "any number of a's" none is possible.

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- a) Then FA would include a**b** which isn't necessarily part of either language
 - b) The FA would include a**a**b which isn't necessarily part of either language



Step 1: transform ^{each graph} A to a TG with a single start state

Step 2: Draw a new start state, Draw a transition to each of the two start states of the graphs you combining. Label these 2 added transitions with the empty string. Remove the original two start state labels (now there is only 1 start state).

1. a) $\Delta + b a^a b + a b b a b$

two start state labels (now there is only 1 start state).

4. a) $\Lambda + b a^* b + a b b a b$

The empty string or a b followed by any number of a's followed by a b or ab followed by b followed by ab.