TSP: Tutorial 3

Question 1

Part a

$X_1 = \{\texttt{aa}, \texttt{abab}, \texttt{abba}, \texttt{abaab}\}$:
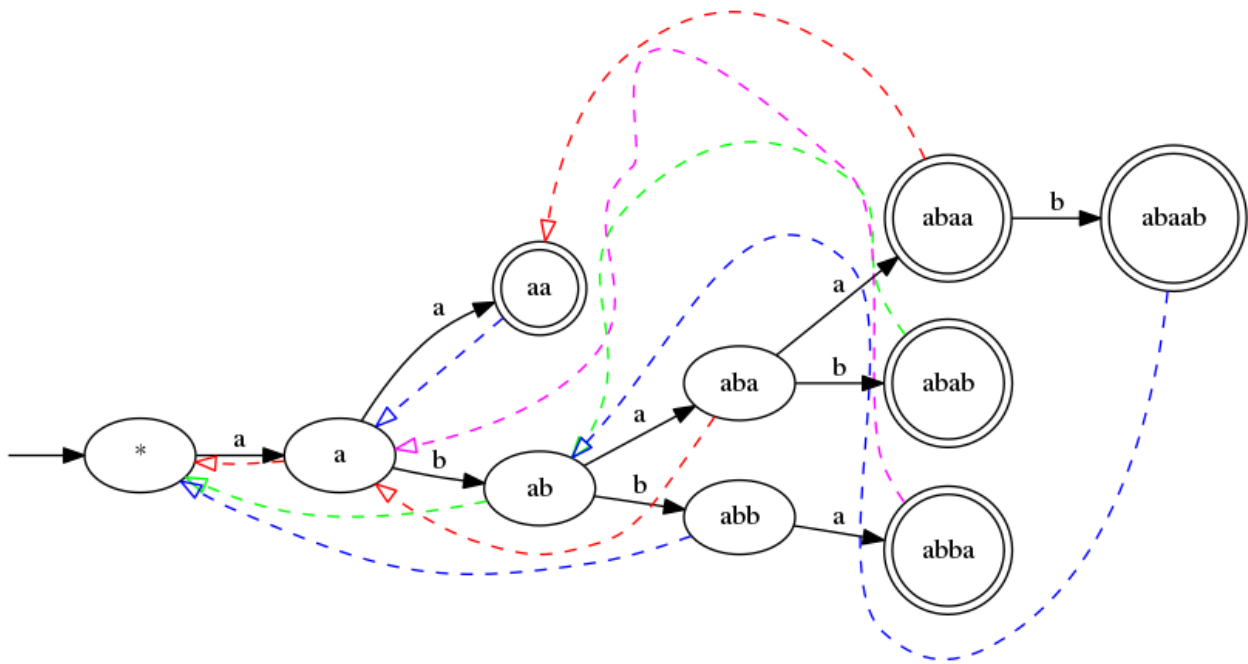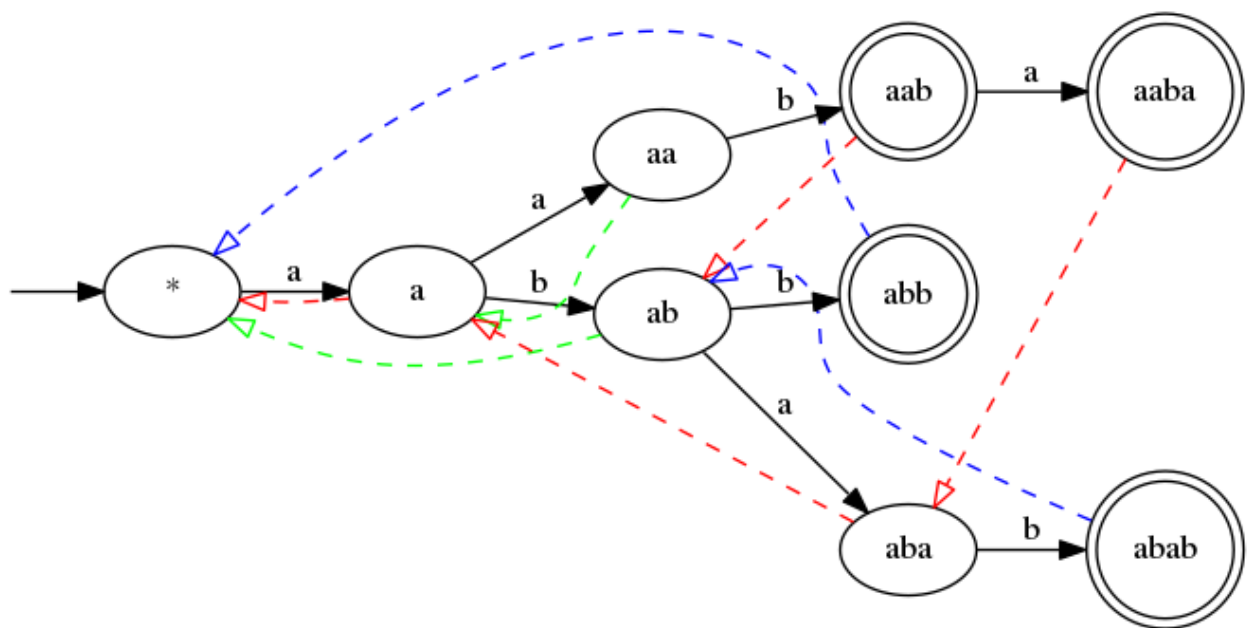
$X_2 = \{\texttt{aab}, \texttt{abb}, \texttt{aaba}, \texttt{abab}\}$:

Note: $*$ states should have a failure link to nil.

Parts b and c

$X_1 = \{\texttt{aa}, \texttt{abab}, \texttt{abba}, \texttt{abaab}\}$:

j	*	**a**	aa	ab	aba	abb	abaa	abab	abba	abaab
$f(j)$	-	*	**a**	*	**a**	*	aa	ab	**a**	ab
$f_{opt}(j)$	-	-	**a**	-	-	-	**a**	ab	**a**	ab

$X_2 = \{\texttt{aab}, \texttt{abb}, \texttt{aaba}, \texttt{abab}\}$:

j	*	**a**	aa	ab	aab	aba	abb	aaba	abab
$f(j)$	-	*	**a**	*	ab	**a**	*	aba	ab
$f_{opt}(j)$	-	-	**a**	-	ab	**a**	*	aba	ab

Part d

$X_1 = \{\texttt{aa}, \texttt{abab}, \texttt{abba}, \texttt{abaab}\}$:
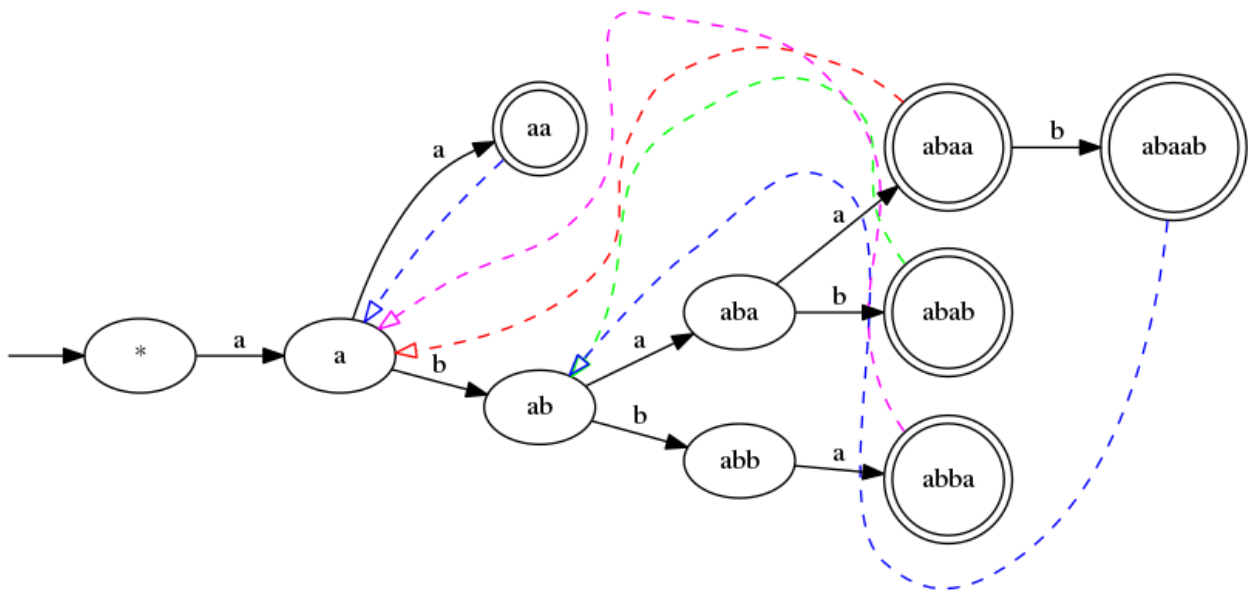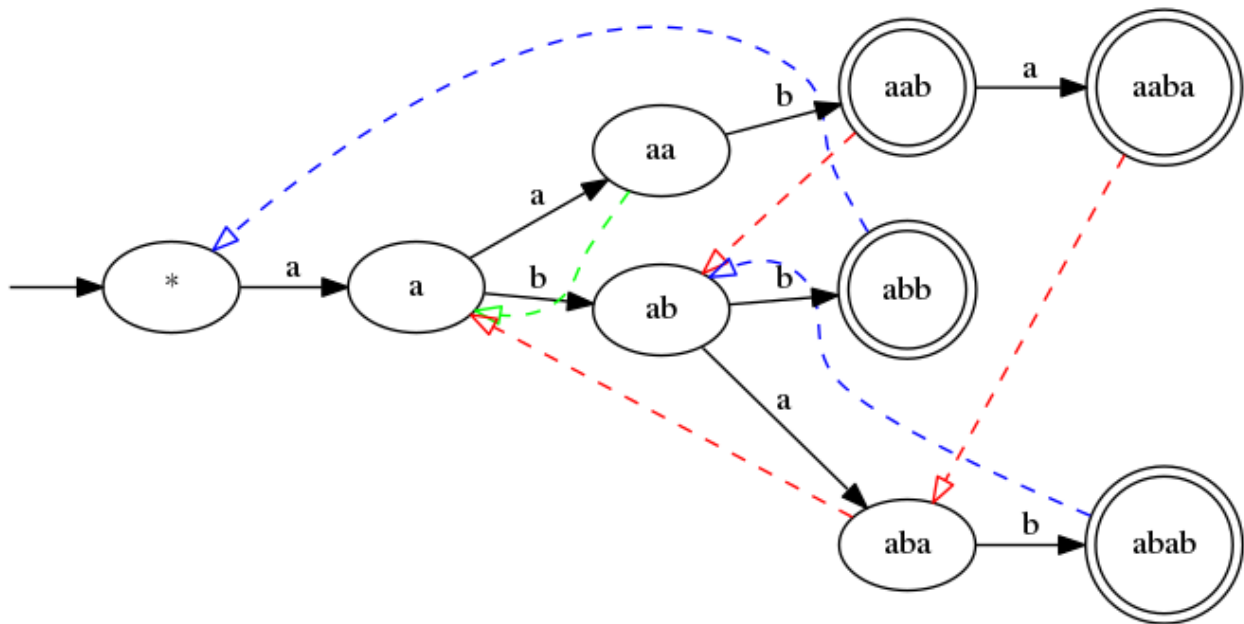
$X_2 = \{\texttt{aab}, \texttt{abb}, \texttt{aaba}, \texttt{abab}\}$:

Note: states with no failure link should have a failure link to nil.

Question 2

j		0	1	2	3	4	5	6	7	8	9
$y[j]$		a	b	a	b	a	b	a	a	b	a
State	q_0	q_1	q_3	q_4	$\underline{q_7}, q_3$	q_4	$\underline{q_7}, q_3$	q_4	$\underline{q_6}$	$\underline{q_9}, q_3$	q_4

j	10	11	12	13	14	15	16	17	18	19
$y[j]$	b	b	a	a	a	b	b	a	b	a
State	$\underline{q_7}, q_3$	q_5	$\underline{q_8}, q_1$	$\underline{q_2}, q_1$	$\underline{q_2}, q_1$	q_3	q_5	$\underline{q_8}, q_1$	q_3	q_4