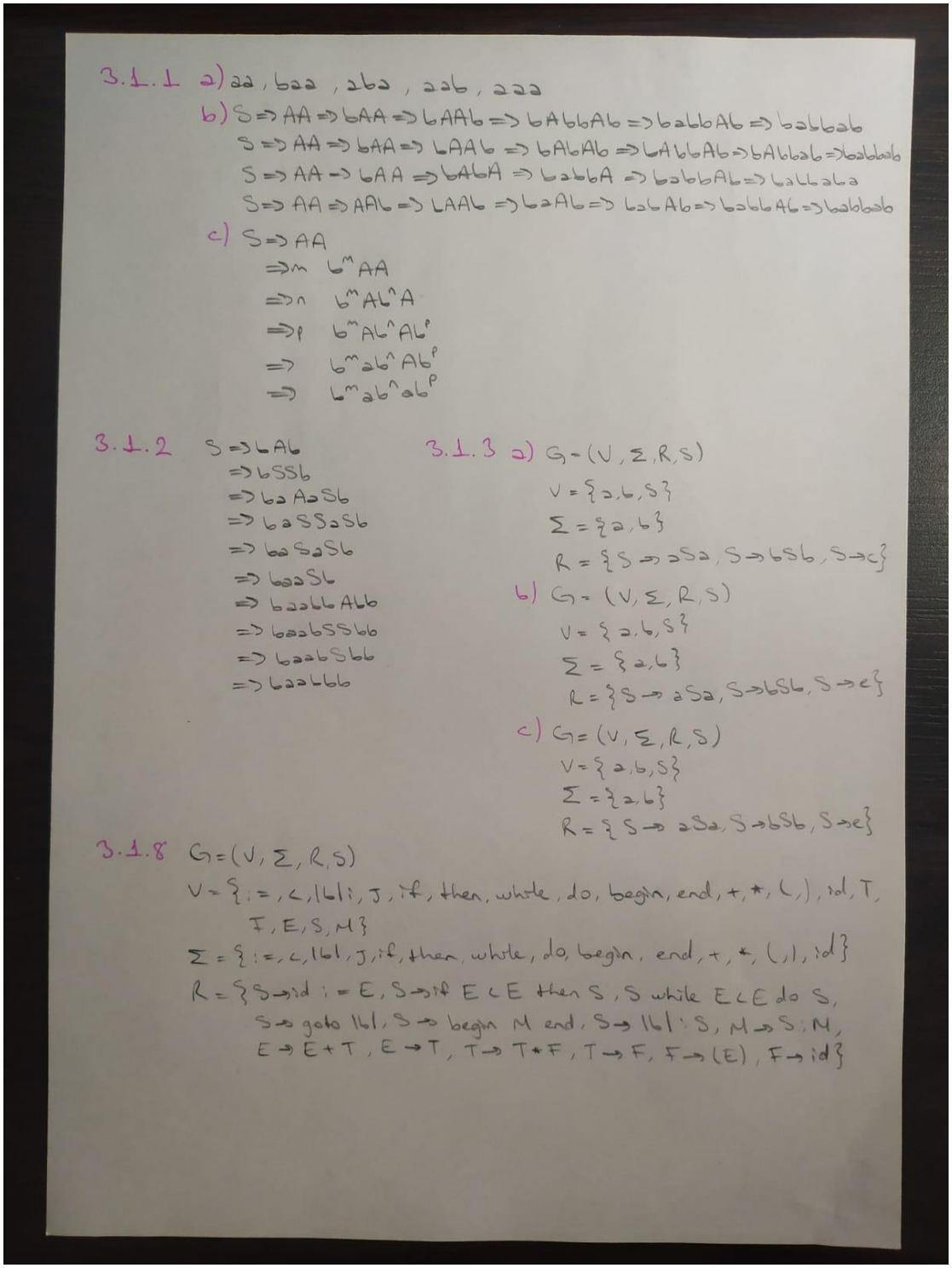
Biçimsel Diller ve Otomata Teorisi

Ödev-7



3.1.1 a) aa, baa, aba, aab, aaa

b) $S \Rightarrow AA \Rightarrow bAA \Rightarrow bAAb \Rightarrow bAbbAb \Rightarrow babbAb \Rightarrow babbab$

$S \Rightarrow AA \Rightarrow bAA \Rightarrow bAAb \Rightarrow bAbAb \Rightarrow bAbbAb \Rightarrow bAbbab \Rightarrow babbab$

$S \Rightarrow AA \Rightarrow bAA \Rightarrow bAbA \Rightarrow babA \Rightarrow babbAb \Rightarrow babbab$

$S \Rightarrow AA \Rightarrow AAb \Rightarrow bAAb \Rightarrow baAb \Rightarrow babAb \Rightarrow babbAb \Rightarrow babbab$

c) $S \Rightarrow AA$

$\Rightarrow^m b^m AA$

$\Rightarrow^n b^m Ab^n A$

$\Rightarrow^p b^m Ab^n Ab^p$

$\Rightarrow b^m ab^n Ab^p$

$\Rightarrow b^m ab^n ab^p$

3.1.2 $S \Rightarrow bAb$
$\Rightarrow bSSb$
$\Rightarrow baAbSb$
$\Rightarrow baSbaSb$
$\Rightarrow baabaSb$
$\Rightarrow baabSb$
$\Rightarrow baabbAbb$
$\Rightarrow baabbSbb$
$\Rightarrow baabSbb$
$\Rightarrow baabbb$

3.1.3 a) $G = (V, \Sigma, R, S)$

$V = \{a, b, S\}$

$\Sigma = \{a, b\}$

$R = \{S \Rightarrow aSa, S \Rightarrow bSb, S \Rightarrow c\}$

b) $G = (V, \Sigma, R, S)$

$V = \{a, b, S\}$

$\Sigma = \{a, b\}$

$R = \{S \rightarrow aSa, S \rightarrow bSb, S \rightarrow e\}$

c) $G = (V, \Sigma, R, S)$

$V = \{a, b, S\}$

$\Sigma = \{a, b\}$

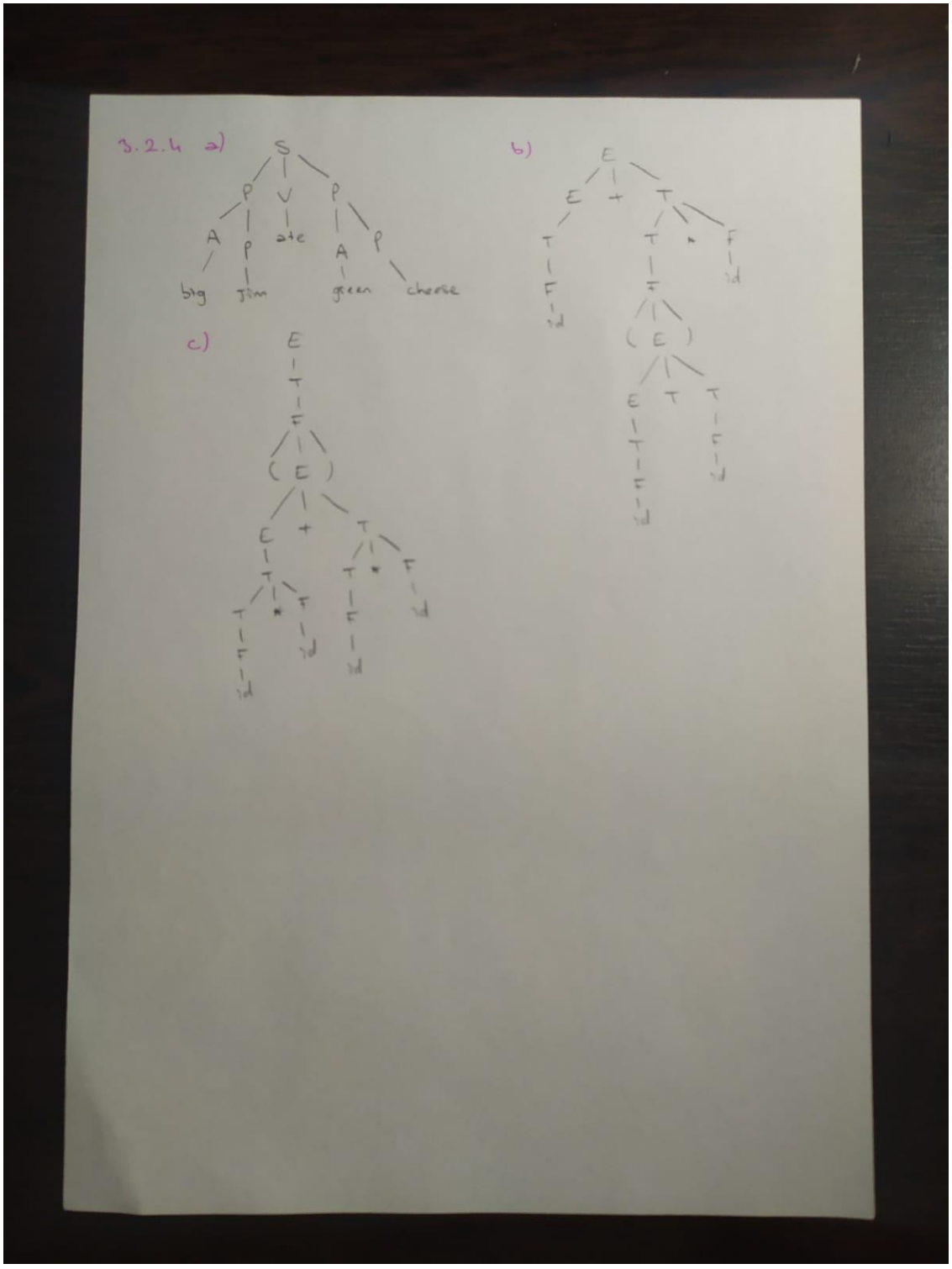
$R = \{S \rightarrow aSa, S \rightarrow bSb, S \rightarrow e\}$

3.1.8 $G = (V, \Sigma, R, S)$

$V = \{:=, <, |, i, j, if, then, while, do, begin, end, +, *, (,), id, T, F, E, S, M\}$

$\Sigma = \{:=, <, |, j, if, then, while, do, begin, end, +, *, (,), id\}$

$R = \{S \rightarrow id := E, S \rightarrow if\ E < E\ then\ S, S\ while\ E < E\ do\ S,$
$S \rightarrow goto\ |, S \rightarrow begin\ M\ end, S \rightarrow |:S, M \rightarrow S;M,$
$E \rightarrow E+T, E \rightarrow T, T \rightarrow T*F, T \rightarrow F, F \rightarrow (E), F \rightarrow id\}$



17253022 Beyza Kaynar