

### 3.3.2

A)  $a(a|b)^*a$ .

String that contains a's and b's that starts with "a" and ends with "a".

Example:

aaabbaaba

B)  $((e|a)b)^*$ .

String that contains a's and b's

Example abbbbabbbbbb

C)  $(a|b)^*a(a|b)(a|b)$

String that starts with zero or n a's or b's always having an a on the third position from right to left

Example:

abababaaab

D)  $a^*ba^*ba^*ba$

String of a's that has just 3 b's

Example

aaaabaaaabaaaaba

### 3.3.5

A) Letter  $\rightarrow [b-d f-h j-n p-t v-z]$

String  $\rightarrow (\text{Letter}|a)^*(\text{Letter}|e)^*(\text{Letter}|i)^*(\text{Letter}|o)^*(\text{Letter}|u)^*$

B) String  $\rightarrow a^*b^*c^*d^*e^*.....z^*$

E) A  $\rightarrow b(aa)^*b$

B  $\rightarrow a(aa)^*b$

C  $\rightarrow b(aa)^*ab|a$

D  $\rightarrow ba(aa)^*b$

String  $\rightarrow (FE^*G|(aa)^*b)(E|FE^*G)$

F) odd  $\rightarrow (bb)^*b$

pair  $\rightarrow (aa)^*$

String  $\rightarrow (\text{odd}|pair)^*$