

Week 6 Homework

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4.2.1 Answer:

1. $S = lm \Rightarrow SS^* \Rightarrow SS+S^* \Rightarrow aS+S^* \Rightarrow aa+S^* \Rightarrow aa+a^*$
2. $S = rm \Rightarrow SS^* \Rightarrow Sa^* \Rightarrow SS+a^* \Rightarrow Sa+a^* \Rightarrow aa+a^*$
- 3.

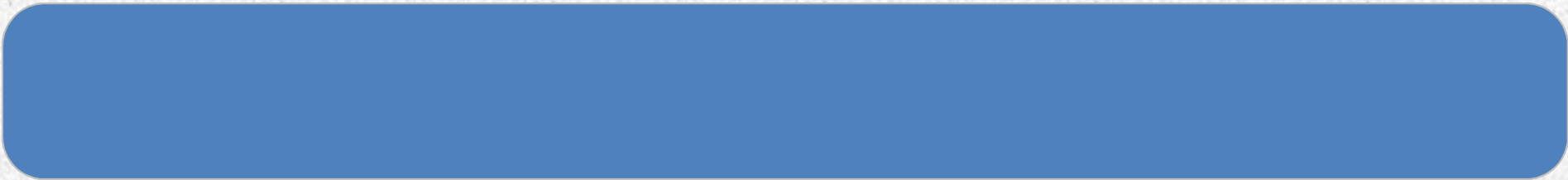
4. Unambiguous
5. The set of all postfix expressions consist of addition and multiplication

4.2.2 (d) Answer:

1. $S = lm \Rightarrow SS \Rightarrow S^*S \Rightarrow (S)^*S \Rightarrow (S+S)^*S \Rightarrow (a+S)^*S \Rightarrow (a+a)^*S \Rightarrow (a+a)^*a$
2. $S = rm \Rightarrow SS \Rightarrow Sa \Rightarrow S^*a \Rightarrow (S)^*a \Rightarrow (S+S)^*a \Rightarrow (S+a)^*a \Rightarrow (a+a)^*a$
3. Omit
4. Ambiguous
5. The set of all string of plus, multiplication, 'a' and symmetrical parentheses, and plus is not the beginning and end of the position, multiplication is not the beginning of the position

4.2.2 (f) Answer:

1. $S = lm \Rightarrow aSbS \Rightarrow aaSbSbS \Rightarrow aabSbS \Rightarrow aabbS \Rightarrow aabbaSbS \Rightarrow aabbabS \Rightarrow aabbab$
2. $S = rm \Rightarrow aSbS \Rightarrow aSbaSbS \Rightarrow aSbaSb \Rightarrow aSbab \Rightarrow aaSbSbab \Rightarrow aaSbbab \Rightarrow aabbab$
3. Omit
4. Ambiguous
5. The set of all strings of 'a's and 'b's of the equal number of 'a's and 'b's



4.2.2 (g)Answer:

Unambiguous, boolean expression