

1.

a)

$$S \Rightarrow baS \Rightarrow babaS \Rightarrow bababa$$

$$S \Rightarrow Sba \Rightarrow Sbaba \Rightarrow bababa$$

b)

$$S \Rightarrow baS \Rightarrow babaS \Rightarrow bababa$$

2.

$$S \rightarrow AB^*b$$

$$(a^*b + (c|d)b)$$

$$A \rightarrow \emptyset | aA$$

$$(a^*)$$

$$B \rightarrow b | bB$$

$$(b^+)$$

$$c \rightarrow c | d$$

$$(c|d)$$

$$G_1 = \{ \{S, A, B, c\}, \{a, b, c, d\}, \{S \rightarrow AB^*b, A \rightarrow \emptyset | aA, B \rightarrow b | bB, c \rightarrow c | d\}, S \}$$