Name: ____________________________

# Math 166 - Theory of Computability - Winter 1999

## Quiz #6 — February 25

1. Let $L_1 = \{a^i b^j c^k : i + k = j\}$. Construct a context-free grammar $G = (V, \Sigma, R, S)$ which generates $L_1$. What are the members of your set $V$?

2. Let $L_2 = \{a^i b^j c^k : i + j = k\}$. Construct a pushdown automaton $M = (Q, \Sigma, \Gamma, \delta, s, F)$ which recognizes $L_2$. It is sufficient to draw the state diagram for $M$.