Math 226.01: Differential Equations and Linear Algebra
Quiz 9
November 19, 1998

Name: _____

(a) (6 points) For the vectors given below determine whether $b \in \text{span}\{v_1, v_2, v_3\}$ or not. If b is in the span, find coefficients λ_1, λ_2, and λ_3, such that $b = \lambda_1 v_1 + \lambda_2 v_2 + \lambda_3 v_3$.

$$v_1 = (\,1\,)\,23, \quad v_2 = (\,-\,)\,2 - 3 - 5, \quad v_3 = (\;\;)\;\;1 - 1\;\;\;2, \quad b = (\,0\,)\,13.$$

(b) (2 points. No partial credit!) Are the vectors v_1, v_2, v_3 linearly independent or dependent?

(c) (2 points. No partial credit!) Are the vectors v_1, v_2, v_3, b linearly independent or dependent?

Sign the pledge: "On my honor, I have neither given nor received unauthorized aid on this Exam."

Signature: _____