MATH 200:921, Quiz 2

First Name: _____ Last Name: _____

Student-No: _____

Grade:

- Do not turn the page until instructed to do so.
- This test is closed book. No calculators or formula sheet allowed.
- You have 20 minutes to write this quiz.
- There are three questions in this quiz, worth a total of 20 points.

Long answer question—you must show your work

1. [8 marks] Consider the planes $H_1 : 3x - z = 0$ and $H_2 : y + 3z = 3$. Find the line l obtained by intersecting the two planes and write down its symmetric equation.

Long answer question—you must show your work

2. [8 marks] Let $P = (1, 1, 0)$ and $\vec{l}(t) = \langle 1, 0, 1\rangle + t\langle 2, -1, 2\rangle$. Find the distance between the point P and the line l.

Long answer question—you must show your work

3. [4 marks] Consider the quadric $Q(x, y, z) = x^2 + y^2 + z = 1$. Describe the intersection of Q with the coordinate plane $z = k$ as k varies.

Name: _____ Student-No: _____