Quiz 1

Summer 2011

Math 1180 **Your name:** _____

1. [5 points] Determine whether the angle between the vectors
$\begin{bmatrix} -3 \\ 1 \\ -1 \\ 1 \end{bmatrix}$ and $\begin{bmatrix} 1 \\ -2 \\ 3 \\ 4 \end{bmatrix}$ is acute, obtuse or right.

2. [5 points] Describe geometrically and algebraically the span of the vectors $\begin{bmatrix} 0 \\ 2 \\ 3 \end{bmatrix}$ and $\begin{bmatrix} -1 \\ 1 \\ 0 \end{bmatrix}$.

3. [5 points] Solve the given system of equations using either Gaussian or Gauss-Jordan elimination.

$$\begin{array}{rcrcrcrcl} 2w & + & 3x & - & y & + & 4z & = & 0 \\ 3w & - & x & & & + & z & = & 1 \\ 3w & - & 4x & + & y & - & z & = & 2 \end{array}$$

bonus problem [5 points extra] Find the equation of the set of all points that are equidistant from the points $P = (1, 0, 2)$ and $Q = (5, 4, 2)$.