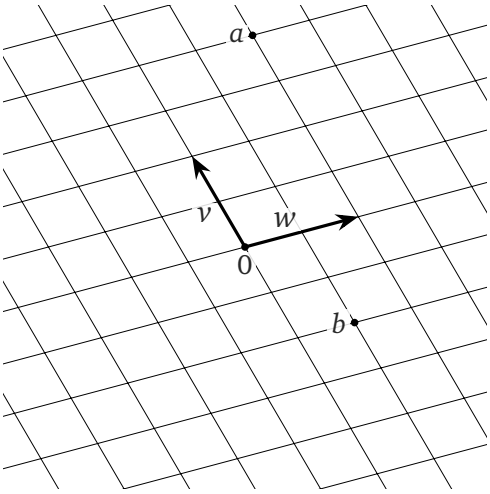
MATH 1553
QUIZ #3: §§3.1, 3.2

Name		**Section**	

1. [1 point each] Consider the following picture of two vectors v, w:



For each of the labeled points, estimate the coefficients x, y such that the linear combination $xv + yw$ is the vector ending at that point. (Use the parallelogram law for vector addition; you needn't show your work.)

_____ $v +$ _____ $w = a$

_____ $v +$ _____ $w = b$

2. [3 points] Consider the following vectors:

$$u = \begin{pmatrix} 1 \\ 0 \\ 3 \end{pmatrix} \qquad v = \begin{pmatrix} 0 \\ -1 \\ 2 \end{pmatrix} \qquad w = \begin{pmatrix} 2 \\ 1 \\ 4 \end{pmatrix}.$$

Decide if w is in $\mathrm{Span}\{u, v\}$ by solving a system of equations.

3. [1 point each] For each of the following sets of vectors, circle the word that describes the span.

$\left\{\begin{pmatrix}1\\1\end{pmatrix}\right\}$ point line plane space

$\left\{\begin{pmatrix}1\\1\end{pmatrix}, \begin{pmatrix}0\\0\end{pmatrix}\right\}$ point line plane space

$\left\{\begin{pmatrix}1\\1\\1\end{pmatrix}, \begin{pmatrix}1\\0\\1\end{pmatrix}\right\}$ point line plane space

$\left\{\begin{pmatrix}2\\0\\0\end{pmatrix}, \begin{pmatrix}2\\3\\0\end{pmatrix}, \begin{pmatrix}4\\5\\6\end{pmatrix}\right\}$ point line plane space

$\left\{\begin{pmatrix}1\\0\\0\end{pmatrix}, \begin{pmatrix}0\\0\\2\end{pmatrix}, \begin{pmatrix}1\\0\\-2\end{pmatrix}\right\}$ point line plane space