Quiz #5
Math 35
March 16, 2009 **Name:**

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1. Determine the components of the vector $\overrightarrow{PQ}$ where $P = (-2, 2, 3)$ and $Q = (-3, 5, 2)$.

2. Let V be the set of all real numbers; define $\oplus$ by $\mathbf{u} \oplus \mathbf{v} = \mathbf{uv}$ and $\odot$ by $c \odot \mathbf{u} = c + \mathbf{u}$. Is V a vector space?

3. Let $\mathbf{x} = \begin{bmatrix} 1 \\ -2 \\ 3 \end{bmatrix}$, $\mathbf{y} = \begin{bmatrix} -3 \\ 1 \\ 3 \end{bmatrix}$, and $\mathbf{z} = \begin{bmatrix} r \\ -1 \\ s \end{bmatrix}$. Find r and s so that $\mathbf{z} - \mathbf{x} = \mathbf{y}$.