

Group \_\_\_\_\_ Scribe \_\_\_\_\_

Other group members \_\_\_\_\_

## Group Quiz for Section 4.2

Let  $\mathcal{B}$  be the orthonormal basis

$$\left( \frac{1}{\sqrt{2}} \begin{bmatrix} 1 \\ 1 \\ 0 \end{bmatrix}, \frac{1}{\sqrt{3}} \begin{bmatrix} 1 \\ -1 \\ 1 \end{bmatrix}, \frac{1}{\sqrt{6}} \begin{bmatrix} 1 \\ -1 \\ -2 \end{bmatrix} \right)$$

of  $\mathbb{R}^3$ . (You don't need to verify that  $\mathcal{B}$  is orthonormal.)

Find the coordinate representation of  $\begin{bmatrix} 7 \\ -8 \\ 9 \end{bmatrix}$  with respect to  $\mathcal{B}$  *without* solving a linear system.