Quiz 7 (Oct 30) Name: Unique ID:

Suppose V is a subspace of $\mathbb{R}^3$ such that the matrix representing projection onto V is

$$P_V = \frac{1}{17}\begin{bmatrix} __ & 4 & 6 \\ __ & __ & 6 \\ __ & __ & __ \end{bmatrix}.$$

Find the missing entries, and give a basis for V. Justify your answer. (*Hint:* Use $P_V^\top = P_V$ and $P_V^2 = P_V$. If $A = 17P_V$, then $A^2 = 17A$. Start by comparing entries above the diagonal.)