## Dartmouth College

## Mathematics 115 - Practice Problems 2

1. Let $V=M_{2}(\mathbb{Q})$ viewed as a quadratic space of dimension 4 with associated quadratic form $q(A)=\operatorname{det} A$. Determine the Witt decomposition of $(V, q)$, characterize its bilinear form in a natural way, and give an orthogonal basis for the space.
