

Advanced Topics in Geometry E1 (MTH.B505)

Kotaro Yamada

`kotaro@math.titech.ac.jp`

<http://www.math.titech.ac.jp/~kotaro/class/2023/geom-e1/>

Tokyo Institute of Technology

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Addendum

In Lemma 3.5, the assumption that \langle , \rangle to be non-degenerate is essential. Otherwise, $m + r \leq n$ holds, in general.

Lemma

For an inner product \langle , \rangle , the subspace W_+ (resp. W_-) of V of dimension m (resp. r) spans V , that is, $V = W_+ \oplus W_-$. In particular $m + r = n$.