... A.

- From Linear Algebra it is known that symmetric matrices can be decomposed into a product of three factors:

$$A = L \cdot D \cdot L^T$$

where L is lower triangular matrix $\Rightarrow$

$$L = \begin{bmatrix} \blacktriangle & \emptyset \\ & \end{bmatrix}$$

and D is a diagonal matrix

$$D = \begin{bmatrix} \backslash & \emptyset \\ \emptyset & \end{bmatrix}$$

Based on LDL-decomposition of A, we can write

$$A^{-1} = (L^T)^{-1} \cdot D^{-1} \cdot L^{-1}$$

and $(L^T)^{-1}$, D^{-1} and L^{-1} are easy to compute

To get to L and D, we are going to have a look at different decompositions of breeding values:

- breeding value u_i of animal i can be written as