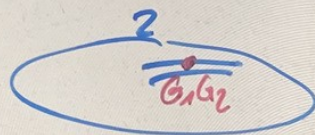
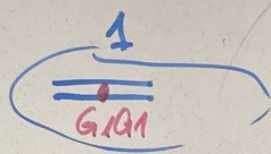


# Summary: LBG 2022

## 1. Basics of Quantitative Genetics

### □ Single Locus Model

Estimate  $a$  and  $d$  from  $y$  using a regression model  
R: Lme4



Animals	Observations	Genotype
1	$y_1$	$G_1G_1$
2	$y_2$	$G_1G_2$
$\vdots$	$\vdots$	$\vdots$
$N$	$y_N$	$\vdots$

- Assume that  $G_1$  has positive effect on  $y$
- Genotypic Values ( $V_{ij}$ )

Genotype	$V_{ij}$	Breeding Value	Dominance Deviation
$G_1G_1$	$a$	$2g\alpha$	$\dots$
$G_1G_2$	$d$	$(g-p)\alpha$	$\dots$
$G_2G_2$	$-a$	$-2p\alpha$	$\dots$