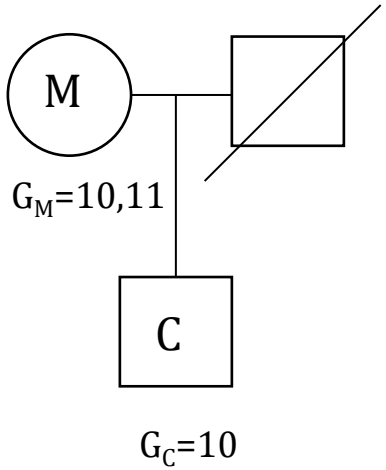
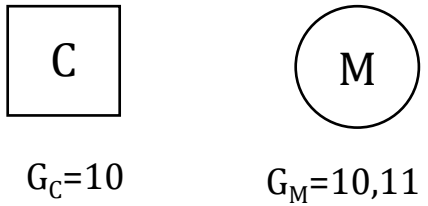
Additional exercises X-chromosomal markers

Maternity duo (X locus)



VS



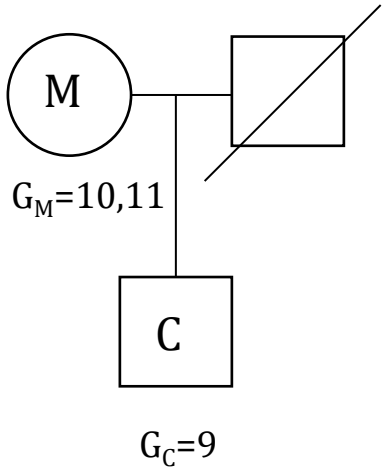
Pr(10)=0.1
Pr(11)=0.9

H1: M is mother to C

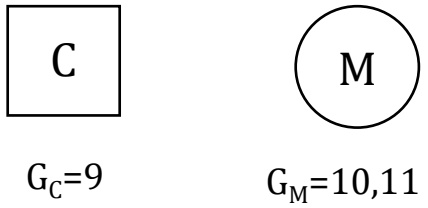
H2: M and C are unrelated

LR? (FamLinkX)

Maternity duo–mutation (X locus)



VS



H1: M is mother to C

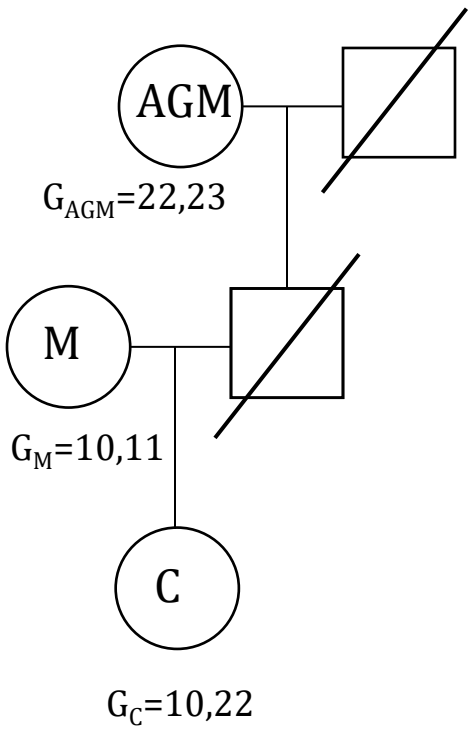
H2: M and C are unrelated

<u>Frequencies</u>
Pr(9)=0.1
Pr(10)=0.1
Pr(11)=0.8

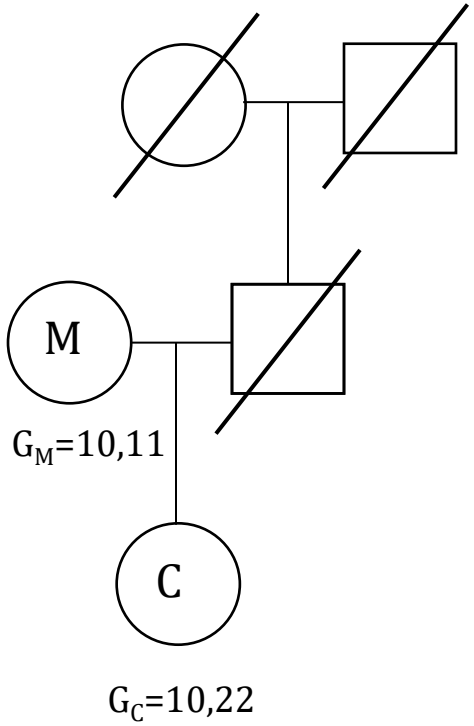
<u>Mutations</u>
Rate=0.001
Range=0.1

LR? (FamLinkX)

Alleged paternal grandmother



vs



G_{AGM}=22,23

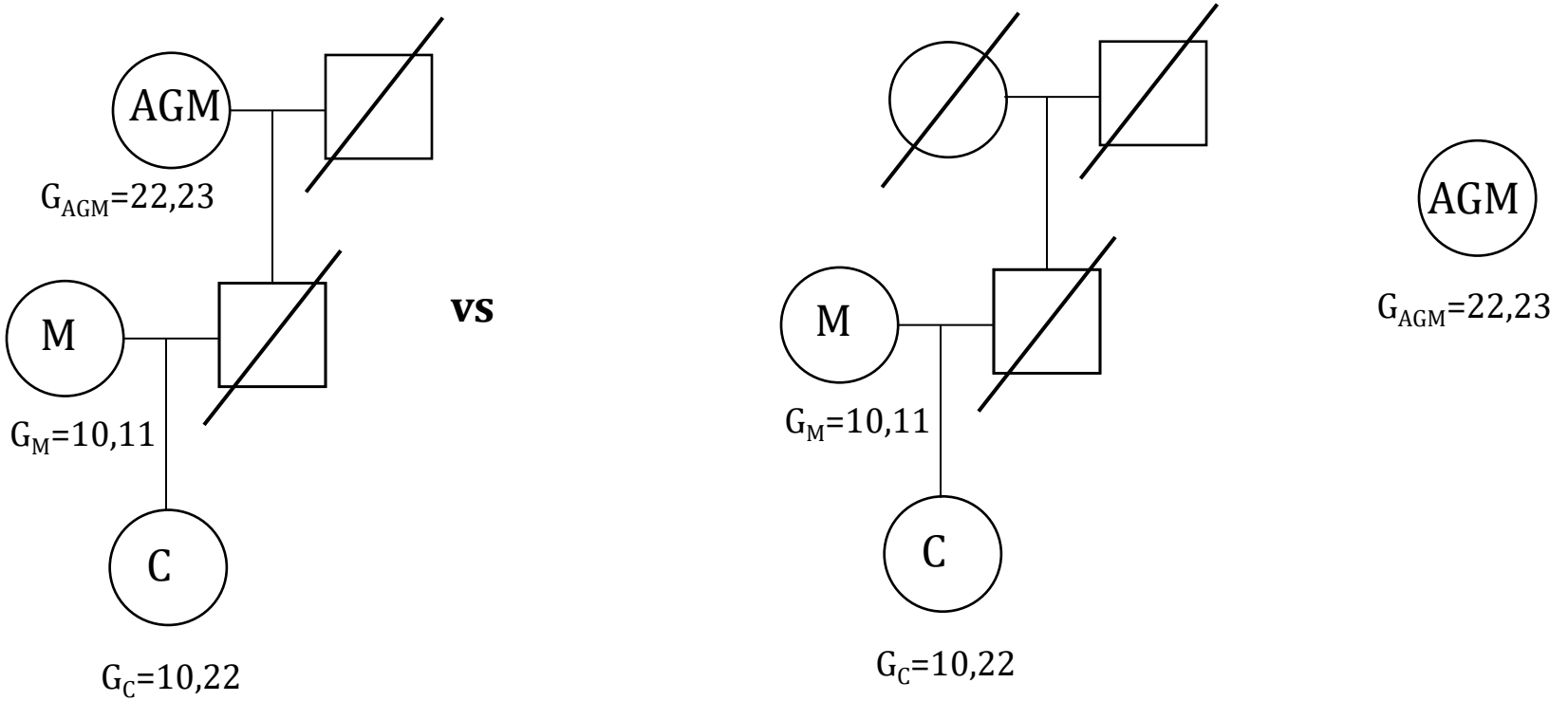
Frequencies
Pr(10)=0.1
Pr(11)=0.5
Pr(22)=0.05
Pr(23)=0.35

H1: AGM is paternal grandmother to C. M is mother to C

H2: AGM and C are unrelated. M is mother to C

LR? (FamLinkX)

Simulations



Frequencies
Pr(10)=0.1
Pr(11)=0.5
Pr(22)=0.05
Pr(23)=0.35

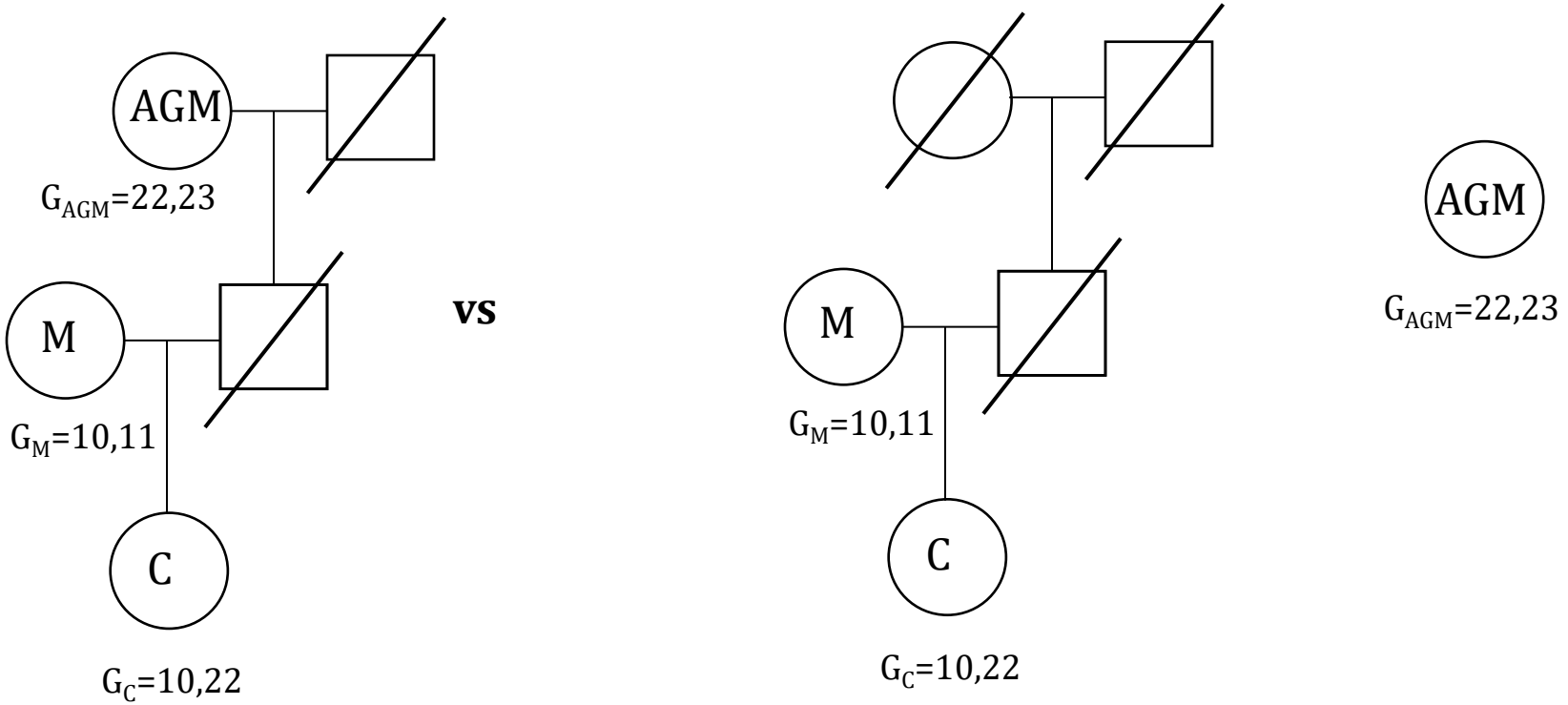
1000 simulations
Seed=12345

H1: AGM is paternal grandmother to C. M is mother to C

H2: AGM and C are unrelated. M is mother to C

Mean/median? Pr(LR>1000)

Simulations



Decaplex

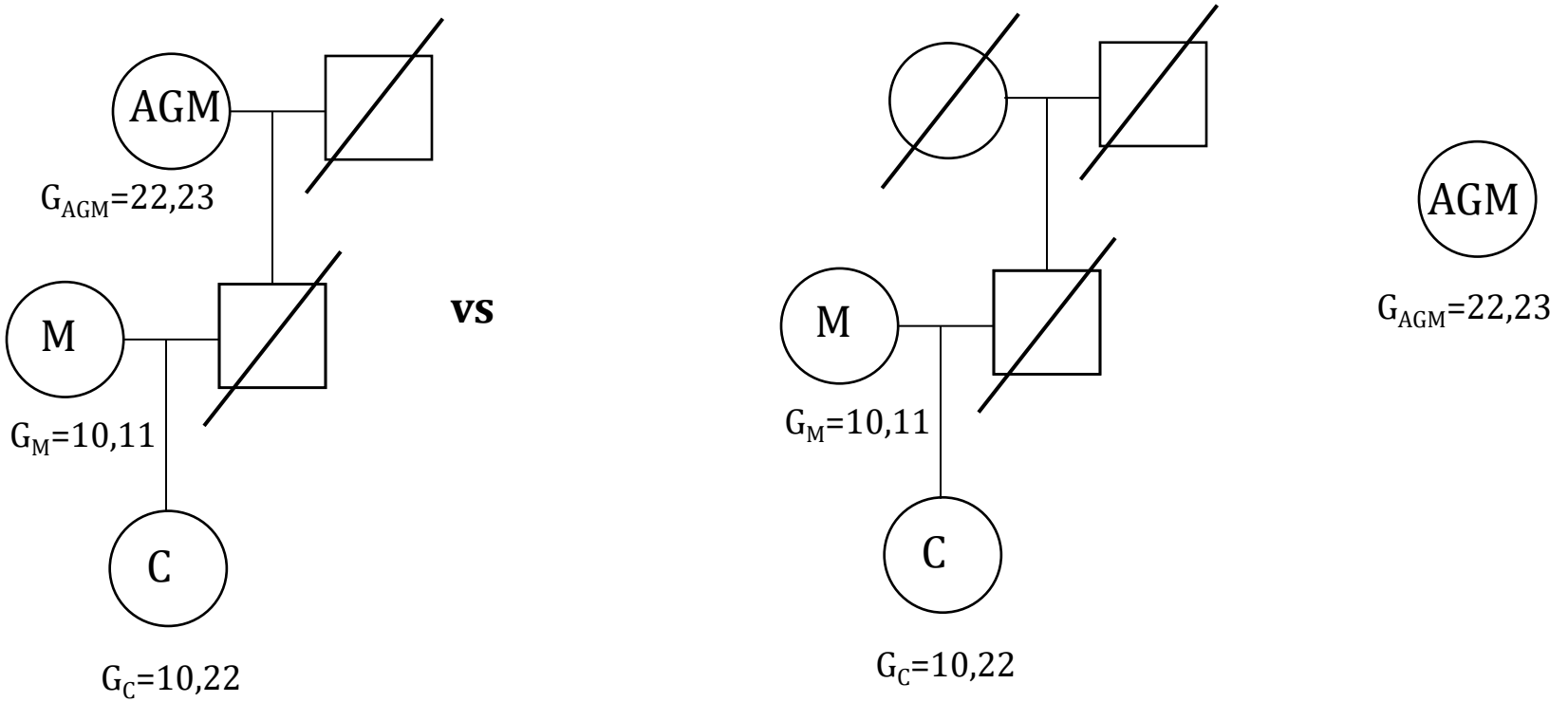
1000 simulations
Seed=12345

H1: AGM is paternal grandmother to C. M is mother to C

H2: AGM and C are unrelated. M is mother to C

Mean/median? Pr(LR>1000)

Simulations



Argus X12

1000 simulations
Seed=12345
Use Merlin

H1: AGM is paternal grandmother to C. M is mother to C H2: AGM and C are unrelated. M is mother to C

Mean/median? Pr(LR>1000)