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**Nools Code in English**

NOTE: RULE 1-6 ARE BASIC RULES

RULE 7-12 ARE DERIVED RULES

**RULE 1**

**inferFromS1xS1\_100A**

**IF** there is a goal to determine the gene type of S

And S1’s partial conclusion is not defined

And S1’s final conclusion is not defined

And the two strains are the identical plant

And the cross for S1xS1 result is equal to 100 percent of phenotype A

**THEN**

Write S1’s partial conclusion as Homozygous

**RULE 2**

**inferFromS1xS2\_100A**

**IF** there is a goal to determine the gene type of S

And S1’s partial conclusion is not defined

And S1’s final conclusion is not defined

And S2’s partial conclusion is not defined

And S2’s final conclusion is not defined

And the cross for S1xS2 result is equal to 100 percent of phenotype A

**THEN**

We cannot draw any conclusion

Do not change anything to the working memory

**RULE 3**

**inferFromS1xS3\_100B**

**IF** there is a goal to determine the gene type of S

And S1’s partial conclusion is not defined

And S1’s final conclusion is not defined

And S3’s partial conclusion is not defined

And S3’s final conclusion is not defined

And the phenotype of S1 is different from the phenotype of S3

And the cross for S1xS3 result is equal to 100 percent of phenotype B

**THEN**

Write S1’s final conclusion as Homozygous Recessive

Write S3’s final conclusion as Homozygous Dominant

**RULE 4**

**inferFromS1xS2\_75A**

**IF** there is a goal to determine the gene type of S

And S1’s partial conclusion is not defined

And S1’s final conclusion is not defined

And S2’s partial conclusion is not defined

And S2’s final conclusion is not defined

And the phenotype of S1 is the same as the phenotype of S2

And the cross for S1xS2 result is equal to 75 percent of phenotype A, and 25 percent of phenotype B

**THEN**

Write S1’s final conclusion as Heterozygous

Write S2’s final conclusion as Heterozygous

**RULE 5**

**inferFromS1xS1\_75A**

**IF** there is a goal to determine the gene type of S

And S1’s partial conclusion is not defined

And S1’s final conclusion is not defined

And the two strains are the identical plant

And the cross for S1xS1 result is equal to 75 percent of phenotype A, and 25 percent of phenotype B

**THEN**

Write S1’s final conclusion as Heterozygous

**RULE 6**

**inferFromS1xS3\_50B**

**IF** there is a goal to determine the gene type of S

And S1’s partial conclusion is not defined

And S1’s final conclusion is not defined

And S3’s partial conclusion is not defined

And S3’s final conclusion is not defined

And the phenotype of S1 is different from the phenotype of S3

And the cross for S1xS3 result is equal to 50 percent of phenotype A, and 50 percent of phenotype B

**THEN**

Write S1’s partial conclusion as “Heterozygous or Homozygous recessive”

Write S3’s partial conclusion as “Heterozygous or Homozygous recessive”

**RULE 7**

**inferFromS1xS2\_HR**

**IF** there is a goal to determine the gene type of S

And S1’s final conclusion is Homozygous Recessive

And the phenotype of S1 is the same as the phenotype of S2

**THEN**

Write S2’s final conclusion as Homozygous Recessive

**RULE 8**

**inferFromS1xS3\_HR**

**IF** there is a goal to determine the gene type of S

And S1’s final conclusion is Heterozygous or Homozygous Dominant

And the phenotype of S1 is the different from the phenotype of S3

**THEN**

Write S3’s final conclusion as Homozygous Recessive

**RULE 9**

**inferFromS1xS2\_HET**

**IF** there is a goal to determine the gene type of S

And S1’s final conclusion is Heterozygous or Homozygous Dominant

And the phenotype of S1 is the same as the phenotype of S2

And S2’s partial conclusion is “Heterozygous or Homozygous recessive”

**THEN**

Write S2’s final conclusion as Heterozygous

**RULE 10**

**inferFromS1xS2\_part\_HD**

**IF** there is a goal to determine the gene type of S

And S1’s final conclusion is Heterozygous or Homozygous Dominant

And the phenotype of S1 is the same as the phenotype of S2

And S2’s partial conclusion is “Homozygous”

**THEN**

Write S2’s final conclusion as Homozygous Dominant

**RULE 11**

**inferFromS1xS2\_HD**

**IF** there is a goal to determine the gene type of S

And S1’s final conclusion is Heterozygous

And S3’s final conclusion is Homozygous Recessive

And the phenotype of S1 is the same as the phenotype of S2

And the cross for S1xS2 result is equal to 100 percent of phenotype A

**THEN**

Write S2’s final conclusion as Homozygous Dominant

**RULE 12**

**inferFromS1xS1\_HR**

**IF** there is a goal to determine the gene type of S

And S1’s partial conclusion is “Heterozygous or Homozygous recessive”

And the two strains are the identical plant

And the cross for S1xS1 result is equal to 100 percent of phenotype A

**THEN**

Write S1’s final conclusion as Homozygous Recessive