Rules of Probability: Product and Sum

1. Use the Product Rule to find the probability of 'DD'.

P generation X

Gametes

probability ( ) ( ) ( ) ( )

F_1 generation

probability ( ) ( ) ( ) ( )

= __ = __ = __ = __

genotype probability for _____:_____=___or ___ %

2. Use the Sum Rule to find the probability of 'dd'

P generation X

Gametes

probability ( ) ( ) ( ) ( )

F_1 generation

probability ( ) ( ) ( ) ( )

= __ = __ = __ = __

genotype probability for _____:_____=___or ___ %

3.1 Find the probability of 'Mm'.

P generation X

Gametes

probability ( ) ( ) ( ) ( )

F_1 generation

probability ( ) ( ) ( ) ( )

= __ = __ = __ = __

genotype probability for _____:_____=___or ___ %

3.2 Find the probability of 'Dd'.

P generation X

Gametes

probability ( ) ( ) ( ) ( )

F_1 generation

probability ( ) ( ) ( ) ( )

= __ = __ = __ = __

genotype probability for _____:_____=___or ___ %

3.3: Find the probability of 'Mm' and 'Dd'.

Probability calculation:	1. genotype of trait 1: ____ ____ (x or +) genotype of trait 2 ____ 2. probability of trait 1: ____ ____ probability of trait 2: ____ 3. probability of trait 1 and trait 2: ____ or ____ %

4. Use a Test Cross to find an unknown allele of a dominant Parent 1 if Parent 2 is homozygous recessive.

Parent 1 has a long tail

Genotype: _____ , Phenotype: _____

Parent 1: If the unknown allele is _____, then

Parent 1 / Parent 2		

Offspring: _____

Genotype ratio is ___:___ , Phenotype: _____

∴ **Parent 1** is _____

Parent 2 has a short tail

Genotype: _____ , Phenotype: _____

Parent 1: If the unknown allele is _____, then

Parent 1 / Parent 2		

Offspring: _____

Genotype ratio is ___:___ , Phenotype: _____

∴ **Parent 1** is _____