

Calculation of distance between 2 genes based on progeny from dihybrid test cross :

P $AB/AB \times ab/ab$



F1 AB/ab

Test cross F1 $AB/ab \times ab/ab$

F2

$2/6$	AB/ab
$1/6$	Ab/ab
$1/6$	aB/ab
$2/6$	ab/ab

How far apart are A and B?

1. Who are parental phenotypes? (LARGEST CLASSES) = AB/ab & ab/ab
2. Who are recombinant phenotypes? (SMALLEST CLASSES) = Ab/ab & aB/ab
3. # map units. = $100\% \left[\frac{\# \text{ of recomb. progeny}}{\# \text{ of total progeny}} \right] = 100\% \left[\frac{1+1}{6} \right] = 33 \text{ M.U.}$

* freq. of recombinant class *