

Mapping

Step 1

$$\frac{w}{w} ; \frac{CyO}{+} ; \frac{MKRS}{+} \times \frac{x_m}{y} ; \frac{2_m}{2_m} ; \frac{3_m}{3_m}$$

→ Look at offspring that is CyO and MKRS:

- ♀ white: No insertion
- ♂ white and ♀ red: Insertion only on X-Chromosome
- ♂ red and ♀ red: Go to Step 2

Step 2

$$\frac{w}{w} ; \frac{+}{+} ; \frac{+}{+} \times \frac{x_m}{y} ; \frac{CyO}{2_m} ; \frac{MKRS}{3_m}$$

F1:

Genotype	Eyes	Sex	Chromosome
CyO ; MKRS	white	♀	not X
		♂	♀ red: X
CyO ; MKRS	red	♀	♂ white: X
		♂	impossible
CyO ; 3 _m	white	♀	only 2
		♂	2
CyO ; 3 _m	red		3
2 _m ; MKRS	white	♀	only 3
		♂	3
2 _m ; MKRS	red		2
2 _m ; 3 _m	white		impossible
	red		all

In other cases: Insertion on Y or 4th chromosome