

Review Problems

1. Which mode of inheritance explains the following?

red + white → red & white, red, white

codominance

A type + B type → O type blood

multiple alleles only! no evidence of codominance in this cross

2. Describe the following people given their karyotype:

47, XX, +21

47 chromosomes, female, extra 21st

45, XY, -2

45 chromosomes, male, missing a #2

3. What type of mutation has taken place?

GAGCCATT → GAGCCCAT

deletion

insertion

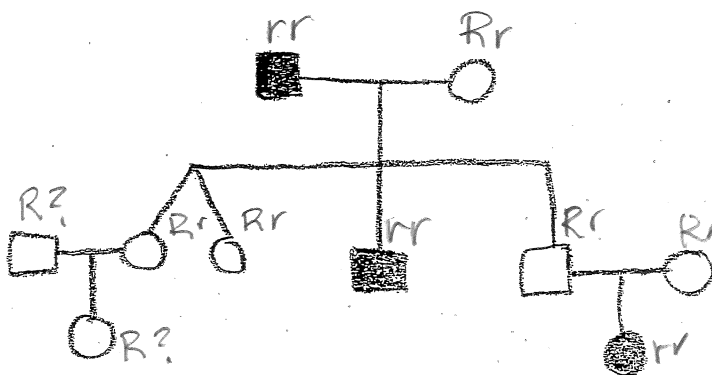
TTCAGA → TTGACA inversion

4. Smooth pea pods are dominant over wrinkled pea pods and the trait shows complete dominance. A cross of a homozygous recessive pea plant and a heterozygous pea plant resulted in 1452 pea plant offspring, 826 smooth and 626 wrinkled. Using a Mendelian test cross, predict the expected result. Use the χ^2 test to determine if the observed offspring fit that prediction.

$$\frac{(826 - 726)^2}{726} + \frac{(626 - 726)^2}{726} = 27.5$$

no

5. Determine the mode of inheritance for red hair and write the genotypes for the people in the following pedigree.



not auto. dom
not x-link dom
not x-link rec

must be autosomal recessive