

1. A black female cat ($X^B X^B$) and an orange male cat ($X^O Y$) were mated to each other and produced a male cat that was calico. Which sex chromosome did this male offspring inherit from its mother and father? Remember that the presence of the Y-chromosome determines maleness in mammals.
 - A. the offspring inherited X^B from its mother and X^O and Y from its father
 - B. the offspring inherited X^B from its mother and Y from its father
 - C. the offspring inherited X^B from its mother and X^O from its father

2. Turner syndrome individuals are aneuploid because they
 - A. lack a X-chromosome
 - B. have an extra X-chromosome
 - C. have an additional full set of chromosome
 - D. have an extra copy of chromosome 22

3. Suppose that a mutation occurred in the SRY gene on the human Y chromosome, knocking out its ability to produce the testes-determining factor. Predict the phenotype of an individual who carried this mutation and a normal X-chromosome.
 - A. female
 - B. male
 - C. sterile
 - D. hard to predict

4. Individuals with Klinefelter syndrome are aneuploid because they
 - A. lack an X- chromosome
 - B. lack a Y-chromosome
 - C. have an extra X-chromosome
 - D. have an extra Y-chromosome

5. A male embryo with a mutation in the SRY gene would
 - A. develop normally
 - B. develop as a female
 - C. not develop testes
 - D. both B and C
 - E. all of the above