

1. A black female cat ( $X^B X^B$ ) and an orange male cat ( $X^0 Y$ ) 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  $X^0$  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  $X^0$  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