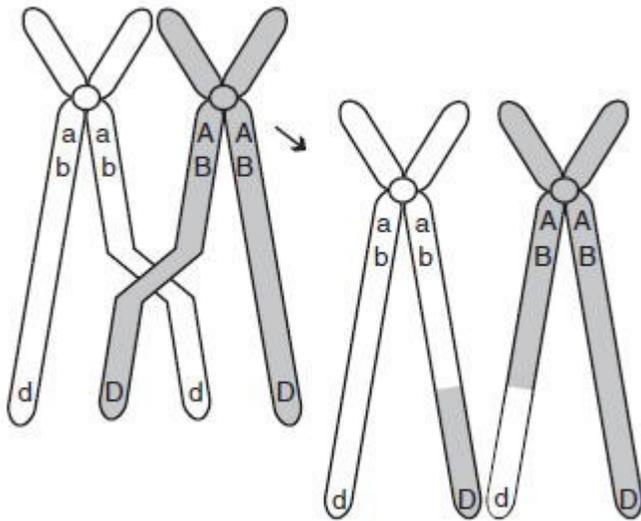


SC.912.L.16.17 – Mitosis and Meiosis – Example 9 Answer

The diagram below shows homologous chromosomes during prophase I of meiosis.



Which of the following correctly describes the process being illustrated?

- A. mutation in which the DNA content of the gene is altered**
- B. segregation of sister chromatids**
- C. condensation and segregation of alleles**
- D. crossing-over in which alleles are exchanged**

Answer

- D. crossing-over, in which alleles are exchanged

This process allows each chromosome to have genetic information from both parents, no matter which parent the chromosome originally came from. Crossing-over is responsible for offspring having some qualities of each parent and is also responsible for genetic variation in a population of species.