	TRUE	FALSE
1. If two individuals are able to have offspring, they must be of the same species.	☐	☐
2. Acquired traits (i.e. things learned) can be transmitted to the next generation.	☐	☐
3. Humans have more chromosomes than any other known species.	☐	☐

4. Why must codons (sequences of bases coding for an amino acid) consist of at least 3 letters?

	TRUE	FALSE
5. All processes in Darwinian evolution are random and without direction.	☐	☐
6. In an evolutionary algorithm, the fact that chromosomes are initialized randomly slows down the process of finding the optimum.	☐	☐

1. This is FALSE. Of course, the most common case is that the offspring is a result of the union of two individuals of the same species. However, individuals of some closely related (but different) species (e.g. lions and tigers) can have offspring. In that case, however, the offspring is not fertile, i.e. it represents an evolutionary dead end.

2. No, this is (generally) FALSE. The transferable information is stored in the germ cells (sex cells) of an individual, and does not change during the lifetime of the individual. However, it is possible that changes that do not involve alterations in the sequence of base pairs, for example changes in gene activity (i.e. gene expression) *can* be transmitted (a concept known as *epigenetics*).

3. This, too, is false. Many other species (e.g. some species of fish) have more chromosomes.

4. This is so, since there are 20 (standard) amino acids. If the codon contained only two letters, they code encode at most 4^2=16 amino acids. With three letters, there are 64 possibilities, leading to some redundancy.

5. No this is FALSE. Mutations are random (undirected), where selection most certainly is not. Selection is of course not predetermined (there is a stochastic element), but the process strongly favors fit individuals.

6. This is also FALSE. In general, EAs are very fast in the early generations, quickly making up for their random starting point, normally in much shorter time than it would take for a person to assign some suitable non-random chromosomes.