Name: _____ Date: _____

Life Science Period: _____

Section A5.3: *Modern genetics uses DNA technology.*

Read pages A150-154 and answer the following questions.

Selective Breeding (pg. 151)

1. What is *selective breeding*?

_____

_____

2. How does *selective breeding* affect the DNA of a species?

_____

_____

Genetic Engineering (pg. 151)

3. What are the three steps involved in genetic engineering?

   a. _____

   b. _____

   c. _____

4. What term(s) are used to identify an organism that is the result of genetic engineering?

_____

5. Provide one example of how scientists have genetically engineered an organism and why they've done it:

_____

_____

6. What is one major difference between changing offspring through selective breeding and genetic engineering?

_____

_____

Risks and Benefits of Genetic Engineering (pg. 152)

7. What is one benefit that we can receive from genetically modified food?

_____

8. What is one risk that we can attribute to genetically modified food?

_____

DNA Identification (pg. 153)

9. How many regions of DNA are used to make a "DNA fingerprint"? _____

10. Who is the only person who can match an individual's DNA fingerprint?

_____

Studying Genomes (pg. 154)

11. What is a *genome*? _____

12. Approximately how many genes are known to exist in the human genome? _____

13. What are some of the benefits of cloning?

_____

_____

14. Why might the practice of cloning raise concerns about its future use?

_____

_____