13.2 Recombinant DNA Technology

1. How was the glowing plant at the top of the page created? (p349 hint: in italics)

2. Genetic ___________ is a much faster and more _______________________________ ______________________________. (349)

3. This method involves _________-or cleaving - ______ from one ______ into small fragments and inserting the __________ into a host organism of the same or different __________.

4. ______________ _______ is made by connecting, or recombining, fragments of ______ from different sources.

5. What are transgenic organisms?

6. List the 3 steps of the process used to produce transgenic organisms. (349-350)

7. What is a restriction enzyme? (350)

8. Loose fragments of DNA do not readily _________________________________.
   To make this process easier, the fragments are first _____________________________. (351)

9. A ______ is a means by which _____ from another species can be carried to a ______ ________.

10. Biological vectors include ________ and ________.

11. What is a plasmid?

12. What are two mechanical vectors?

13. What is gene splicing? (352)

14. Sketch, color and label fig 13.6 page 352 below.
15. The process of making extra copies of recombinant DNA is a form of ________. Clones are ____________________________. (352)

16. What is an advantage to using bacterial cells to clone DNA?

17. What is one of the benefits of cloning animals? (353)

18. How are recombinant bacteria beneficial to industry?

19. Why are mining companies interested in bioengineering bacteria?

20. Explain two ways recombinant bacteria are used in medicine. (355)
   A. 
   B.

21. What are the two reasons mice are "a favorite animal for transgenic studies"?
   A. 
   B.

22. What are two other animals that are used in transgenic studies?
   A. 
   B.

23. Explain how recombinant bacteria are used in agriculture.

24. Plants have been genetically engineered to ___________________________________________. (356)

25. If you could splice another animal's genes into your DNA, what animal would you use and what genes? I would splice in the DNA for tarantula eyes and arms so that I could make sure you are doing your work and grade all your papers at once. Then I would learn to play every instrument and become a one man/tarantula band called THE Mr. McSPIDERLAND EXPERIENCE!!! Then I would make billions of dollars and I would give each of you one of them. HA HA HA HA HA!!! (for extra credit, draw a picture of your transgenic self)