**Recombinant DNA and Transgenic Organisms Review**

1. What is recombinant DNA?

2. What is gene splicing?

3. What is a transgenic organism? Why would we want to create a transgenic organism?

4. What is a plasmid?

5. What is a vector?

6. Steps required to create a transgenic organism:

 1. Use a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, a circular ring of DNA, as a vector to hold the desired gene.

 2. Cut the plasmid with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ enzymes.

 3. Cut out the desired gene from the foreign organism with the same \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ enzymes.

 4. Cutting the vector and the gene with the same restriction enzyme creates overlapping \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 5. Place the cut out gene into the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and reattach the ends with a different enzyme.

 6. You have now created \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DNA – DNA from more than one organism!

 7. Insert the recombinant DNA into the bacteria or organism of choice. This is called

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 8. The new organism that has DNA from different organisms is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 organism.

 9. The transgenic organism is reproduced, producing \_\_\_\_\_\_\_\_\_ copies of the recombinant DNA each time.

7. Several examples of how we use transgenic organisms to improve our quality of life include: