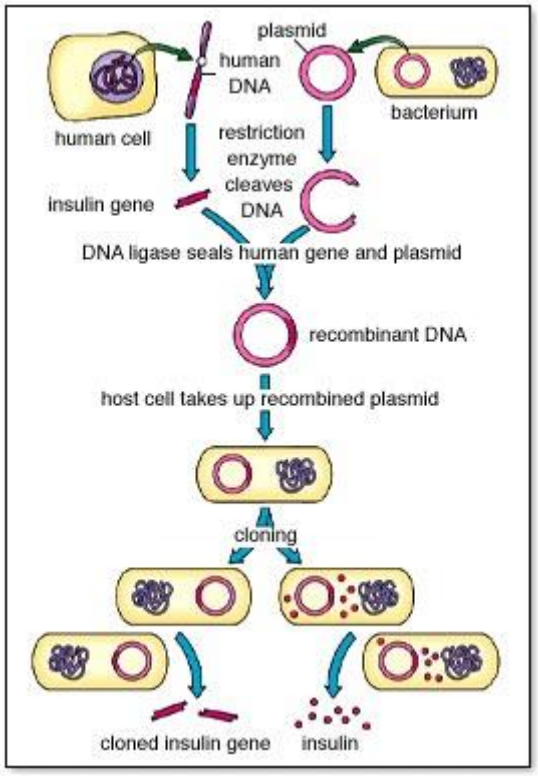
Genetic Engineering and Recombinant DNA



Part A

1. Plasmid is removed from bacterial cell (circle of bacterial DNA)
2. Desired gene is cut from human DNA using restriction enzymes
3. The gene is trimmed to fit perfectly into the plasmid
4. Restriction enzymes are used to cut a space in the plasmid for the human gene
5. Recombinant DNA is created (bacterial & human DNA combined)
6. Recombinant DNA is put into the bacterial cell so that the bacteria can create whatever the gene codes for (such as gene to make human insulin or HGH)
7. When the bacterium reproduces, it passes the recombinant DNA onto its offspring, who can also create whatever that desired gene codes for

Part B

1. A plasmid is a circular piece of DNA from a bacterium.
2. Recombinant DNA is DNA from two different organisms combined
3. This process is referred to as gene splicing as two pieces of DNA are joined or spliced together