

Test **First Term**

3) **Make a table** explaining the differences between Mitosis and Meiosis. (1 point)

Some points to be taken in account: result in diploid/haploid cells; result in 2/4 cells; separation of chromatids or homologous chromosomes, conventional process or specific of gonade tissues.

Analyze the following samples. Identify the following terms n the images, and determine which is the carcinogenic sample.

Select for each problem the appropriate solution:

A patient has lost a big part of his liver

Due to a mutation, a patient suffer a critic illness.

A very expensive exemplar of cow has been obtained, and we want to get more identical individuals

Gene therapy

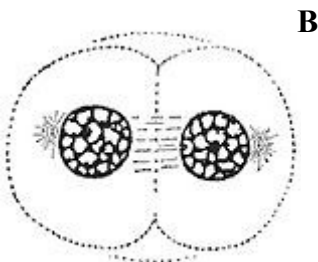
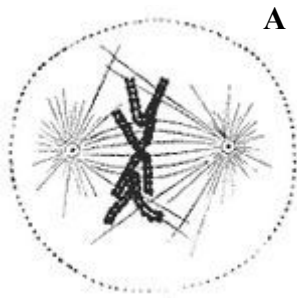
Transgenics

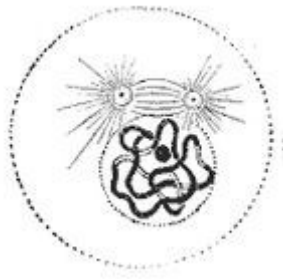
Heterologous synthesis

Reproductive cloning

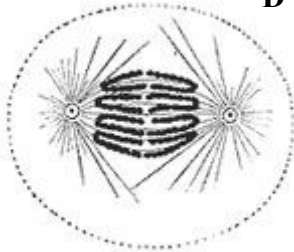
Therapeutic cloning

5) **Order** the images, and **associate** each image with its corresponding name of the phases of mitosis: prophase, metaphase, anaphase, telophase. Draw your own representation of the process and identify the following terms: chromosomes, centrosome, sister chromatids, microtubules. (1point)





C

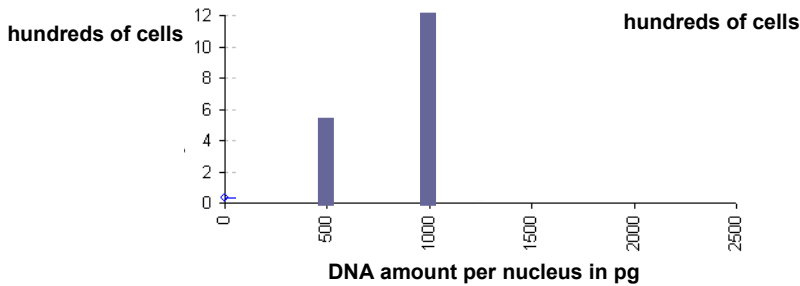


D

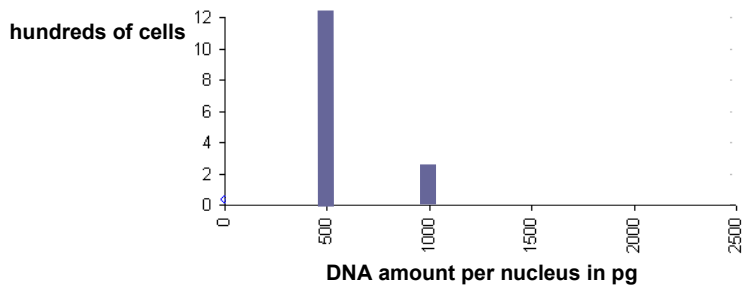
6) A patient has lost a big part of his liver due to an accident. You are part of the medical team at charge, and you have decided to use **therapeutic cloning** as a strategy. Make a drawing representing the process you have to follow. Identify the following steps: dedifferentiation, stem cell, totipotent cell, differentiated cell.

7) From the graphics below, **select**, in your opinion, which sample belongs to a carcinogenic tissue. The graphs shown express, for each sample, the amount of DNA per cellular nucleus. Take in account that:
 - in cancer cells, mitosis is being performed continuously.
 -the first step of mitosis is DNA duplication.
Justify briefly your answer (2-3 lines)

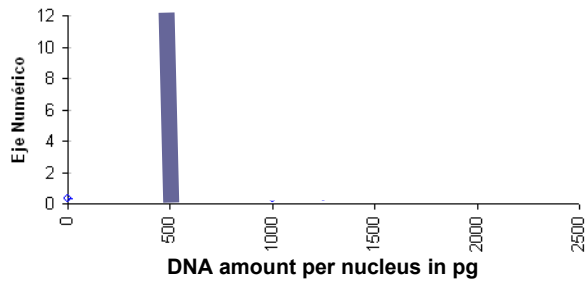
Sample 1



Sample 2



Sample 3



Sample 4

