

Name: _____

DNA, DNA Replication, Mitosis

Date: _____

- 1) What are the elements found in nucleic acids: _____, _____, _____, _____, _____ and sometimes _____.
- 2) The basic building block for a nucleic acid is: _____.
- 3) A single nucleotide is made up of: _____, _____ and _____.
- 4) In the space below, draw a nucleotide.

- 5) Write out the full name for DNA.

- 6) What is a gene?

- 7) Where in the cell are chromosomes located? _____

- 8) DNA can be found in what two organelles?

- 9) What two scientists established the structure of DNA?

- 10) What is the shape of DNA?

- 11) What are the sides of the DNA ladder made of?

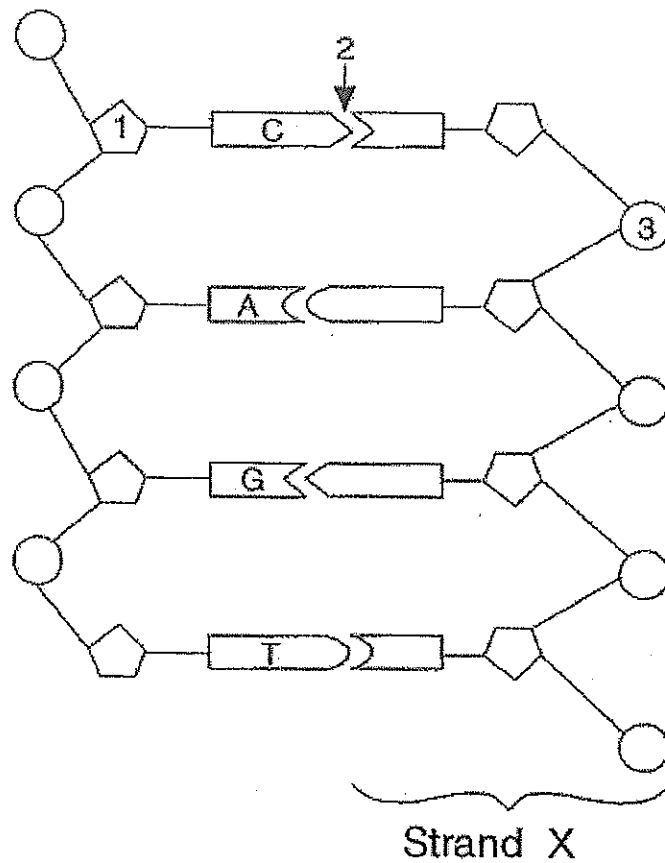
- 12) What are the "rungs" of the DNA ladder made of?

- 13) What sugar is found in DNA? _____

- 14) Chromosomes are found in the _____, and are composed of _____ and _____.

15)

What is the base sequence of Strand X?



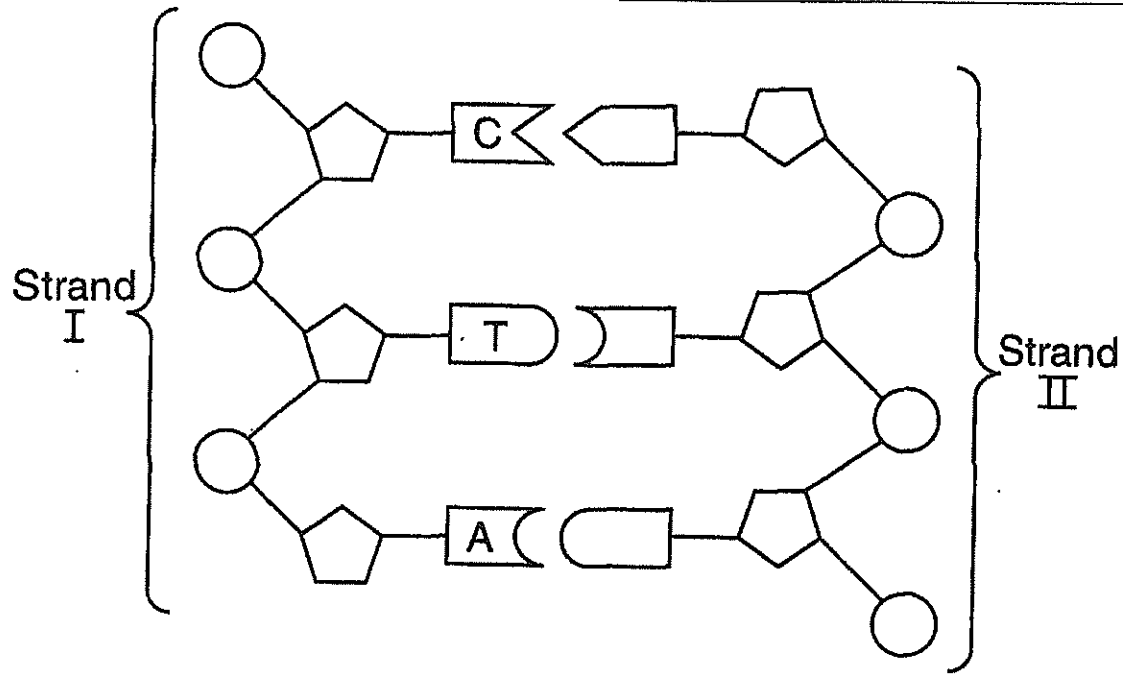
16)

During _____, DNA replication begins when an _____ breaks the _____ bonds. The DNA molecule unzips and free nucleotides pair up with the original DNA strand. The new DNA molecule is made up of a _____ and a new strand of DNA.

17)

Draw a picture of a strand of DNA undergoing DNA replication.

19. What type of molecule is shown below? _____



19. What is the basic unit of structure for this molecule? What does it consist of?

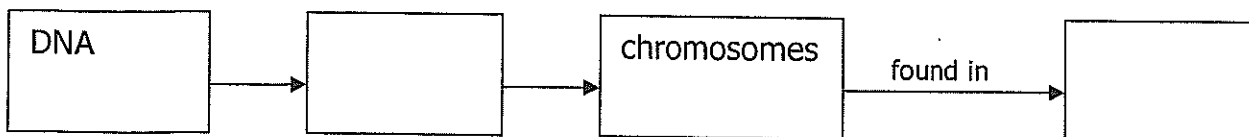
20. What does the circle represent? The pentagon?

21. Label the missing nitrogenous bases.

22. What type of bond holds the bases together? Why is it an advantage for it to be weak?

23. Where in the cell do we find this type of molecule?

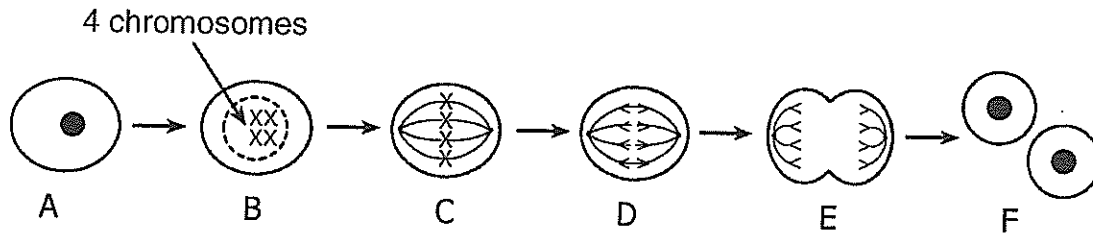
24. Fill in the missing boxes.



Name: _____

Date: _____ Mitosis and DNA Replication

25. Identify each of the steps of mitosis in the diagrams below. For each process, describe what occurs in the cell.



A –

B –

C –

D –

E –

F –

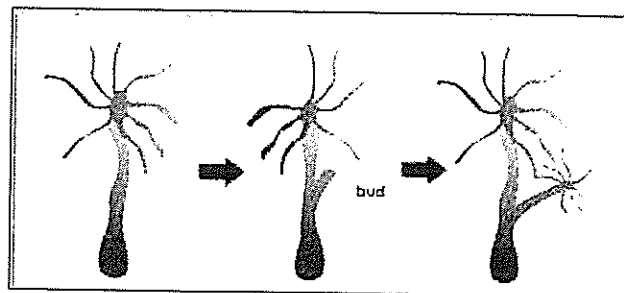
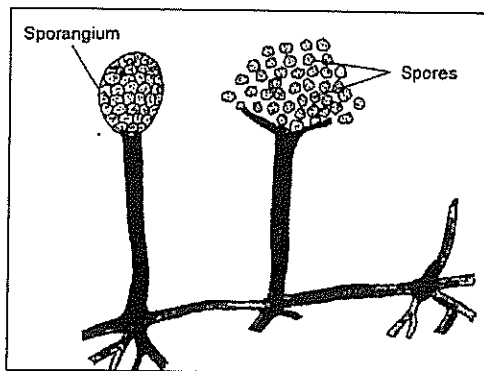
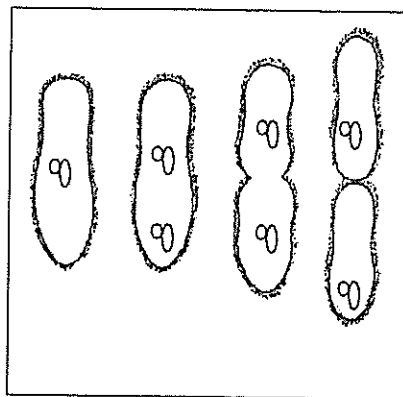
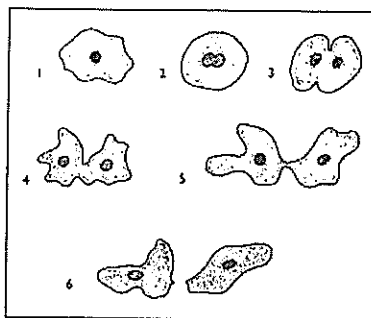
26. How do the cells in stage F compare to the cell in stage A?

27. What is the difference in the process of cell division in plant cells and animal cells?

28. What is cytokinesis?

29. What is the name of the structure that holds chromatids together?

30. Name the four processes below.



31. What do the above processes have in common?

32. What is rapid, uncontrolled cell division called?

33. State two ways that mitosis is different in plant cells and animal cells.

a- _____

b. _____

34. Uncontrolled cell division is called _____

35. Label the following structure –

