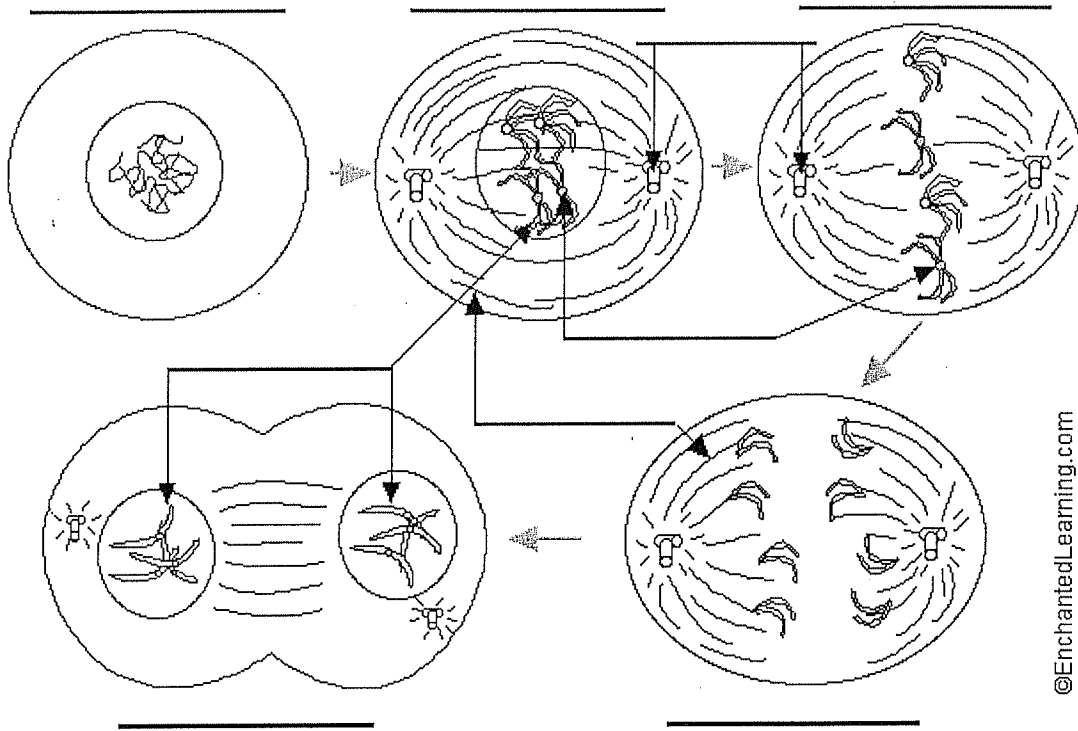


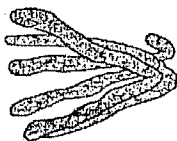
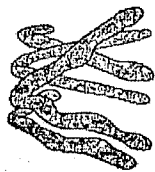
Mitosis

1. Label the following diagram of mitosis of an animal cell.

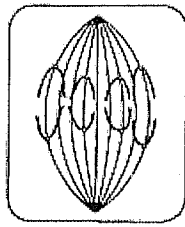


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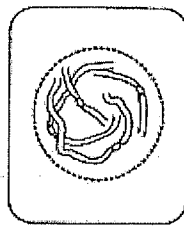
2. During which stage of a cell's cycle do the replicated chromosomes thicken and become visible? _____
3. In animal cells, which structure is thought to produce the spindle fibers that help separate the sister chromatids during anaphase? _____
4. Is this structure found in plant cells? _____
5. The drawing below has been made from a photograph showing a cell undergoing mitosis. Based on the drawing, in what stage of mitosis must the cell have been in?



6. The drawings A-E show stages of mitosis in an plant cell.



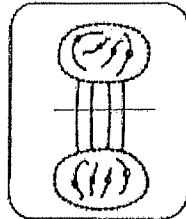
A



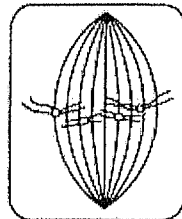
B



C



D

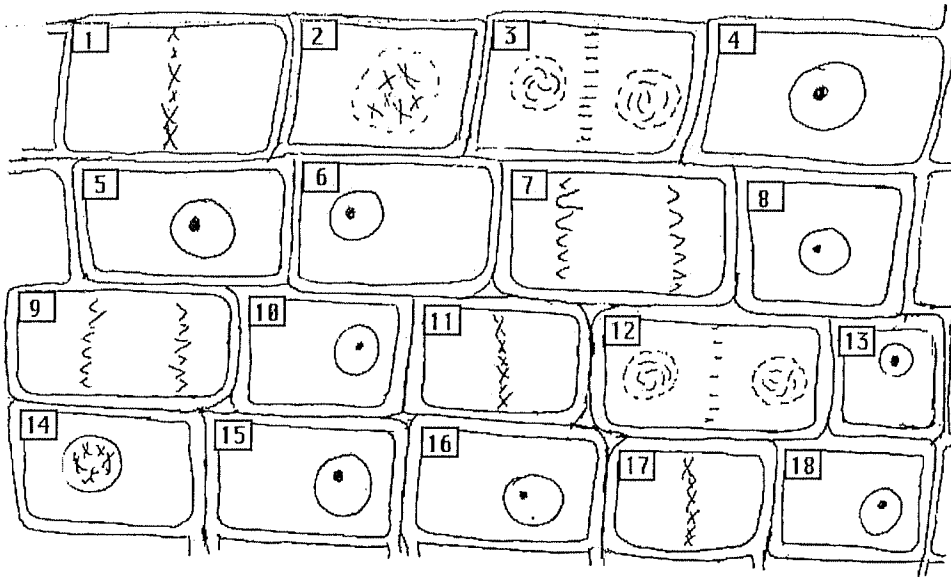


E

- (a) Which of the drawings A -E shows
- (i) interphase _____ (DNA is replicated)
 - (ii) prophase _____ (**chromosomes – 2 sister chromatids – shorten**)
 - (iii) metaphase _____ (**sister chromatids** line up)
 - (iv) anaphase _____ (**sister chromatids** separate)
 - (v) telophase _____ (new nucleus forms at each end)
 - (vi) cytokinesis _____ (cell contents divided between 2 **daughter cells**)
- (b) Give two processes which occur during interphase and which are necessary for nuclear division to take place.

_____ of the cell and _____ of the DNA

7. This drawing shows various stages of mitosis in a fast growing onion root tip.



Identify the cells (by number) which are in the following stages of mitosis:

interphase _____
 prophase _____
 metaphase _____
 anaphase _____
 telophase _____

8. Using colored pens or pencils, show how 2 chromosomes are passed from mother cell to two daughter cells.

