CELL CYCLE AND CANCER: Data Based Question

Part 1:

1. The following table shows average times required for normal and diseased chicken stomach cells to complete the cell cycle. Copy the table into your journal, and answer the following questions in full sentences.
   1. In normal chicken cells, which phase requires the longest time for completion?
   2. In normal chicken cells, which phase requires the next longest time for completion?

TIME FOR MITOSIS OF NORMAL A ND CA NCEROUS CHICKEN STOMACH CELLS (MIN.) Normal Chicken Stomach Cells (MIN) Cancerous Chicken Stomach ls (Min.)

Interphase 520 380

Prophase 55 45

Metaphase 10 10

Anaphase 5 3

Telophase 10 10

1. Use the table to answer the following questions:
   1. What is the total time needed for a nor mal chicken stomach cell to complete a cell cycle? (Total up the time in minutes for each phase)
   2. What is the total time needed for a cancerous chicken stomach cell to complete cell cycle?
2. How do cancer cells differ from normal cells in total time required for the cell cycle?
3. How do cancer cells differ from normal cells in time spent in each phase?

**Part 2:**· Instructions: Using the data from the NORMAL chicken cells, prepare a circle graph which shows the number of minutes that the cells spend in each phase.

* + Cut out the circle, and glue it into your journal.
  + Graph the NORMA L "Time in Minutes” of each phase from the table above onto the circle.
  + The circle is divided into 15 minute sections. Each section of the graph equals 15 minutes. If a phase is not exactly 15 minutes long, (or some interval close to a multiple of 15 minutes), approximate the position of the li ne on the graph.
  + Shade each phase on your graph with colored pencils.
  + Identify each phases by shading the key *to* correspond with the shading on your graph.

= Interphase

= Prophase

= Metaphase

= Anaphase

=Telophase

Answer t he following quest ions based on your graph:

1. What important changes occur in the nucleus and cell during the longest phase of Mitosis
2. Why do you think so much time is spent in this phase?