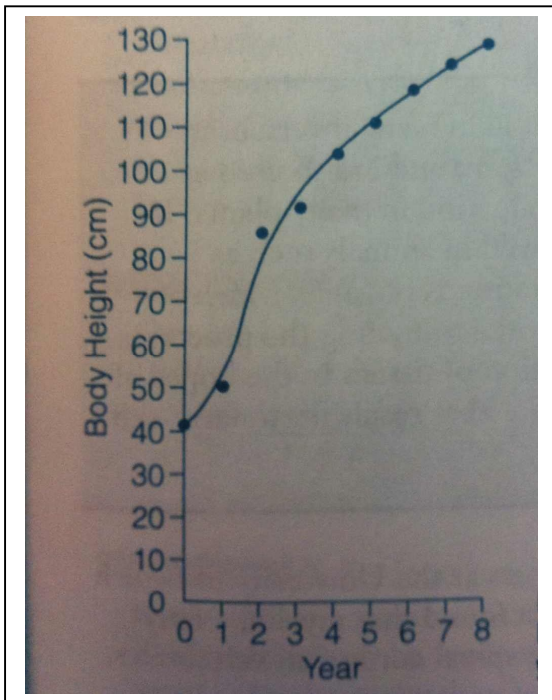


Section 1.3 The Cell Cycle in Your Body – Answer Key

- 1) Through the process of **mitosis**, you become a living system composed of hundreds of trillions of cells working together.
- 2) What do groups of specialized cells form? **They form tissues.**
- 3) What do groups of specialized tissues form? **They form organs.**
- 4) What do groups of organs form? **They form organ systems.**
- 5) What does the cell cycle ensure? **The cell cycle makes sure that each one of your cells has the same amount of chromosomes.**
- 6) What do all humans have in common? **We all have the same number of chromosomes.**
- 7) How many chromosomes do humans have? **Humans have 46 chromosomes.**
- 8) How many chromosomes do dogs have? **Dogs have 78 chromosomes.**
- 9) How many chromosomes do tomato plants have? **Tomato plants have 24 chromosomes.**
- 10) What fish do humans have the same number of chromosomes as? **Humans have the same number of chromosomes as the Black Molly.**
- 11) This shows that the number of **chromosomes** alone does not distinguish one **species** from another.
- 12) Graphing Human Body Growth. One part of the body in which growth can easily be seen is the skeletal system, your bones.
 - a) What evidence have you seen in your own body that bones grow? **Every year I grow taller.**

Year	Height	Year	Height
Birth	42 cm	5	112 cm
1	50 cm	6	118 cm
2	86 cm	7	124 cm
3	92 cm	8	128 cm
4	104 cm		

b) Make a line graph from the table above.



c) On your graph, find the two years between which Joy's skeleton grew the most.

Between years 1, 2 and 3.

d) Between which two years did her skeleton grow the least? **Between years 7 and 8.**

e) When do you think mitosis and cell division occurred most rapidly in Joy's skeleton? **I think mitosis occurred most rapidly during the years 1, 2 and 3.**

13) How many cells die in your body every minute? **Around 3 billion cells die every minute.**

14) Why do cells die? **Cells die because they are damaged for they do not get enough food and/or oxygen.**

15) Why must they be replaced? **They must be replaced to keep a healthy body.**

16) Which cells live the longest? **Brain cells live the longest.**

17) Which cells are replaced most often? **Stomach lining cells are replaced most often.**

- 18) Define regeneration. **Regeneration is when damaged cells are repaired or when body parts grown back.**
- 19) Can adult humans regenerate lost body parts? **Adults cannot regenerate lost body parts.**
- 20) Severed finger tips of children up to the age of 12 may **regenerate** completely.
- 21) Why do we age? **One of the reasons that we may age is because when our cells die, they are replaced more slowly.**
- 22) What happens if cells begin to divide uncontrollably? **If cells begin to divide uncontrollably then the result is cancer.**
- 23) What do cancerous cells do? **Cancerous cells disturb surrounding cells and affect their normal functioning.**
- 24) What are some substances that can increase the risk of cancer? **Some substances that can increase the risk of cancer are tobacco, asbestos, certain chemicals and radioactivity.**
- 25) Statistically, each cigarette robs a regular smoker of 5.5 minutes of life. If the average smoker consumes 3000 cigarettes per year, how many days of life are lost in just one year of smoking? **In just one year of smoking, 11.45 days are lost: 24 hours x 60 min = 1440 minutes. There are 1440 minutes in a day, so**
- 3000 cigarettes per year x 5.5 min/1440 minutes = 11.45 days.**