

## **Pituitary Tumor Impact on Growth**

### **Description:**

Do a full-brain workout to study for this exam. This technique is perhaps the single most effective way to master a topic because it includes: recalling information, describing a topic as thoroughly as possible, thinking about a concept from many angles, actively reviewing your notes and textbook, writing about a topic, seeking and correcting misunderstandings, and critically deriving the simplest correct answer for the question being asked.

### **Directions:**

1. Follow these steps in sequential order:
  - a. Using a colored pen (e.g. **green**) and only your own memory, write down everything you can to answer the question. This includes definitions, diagrams, feedback pathways, graphs, concept maps, keywords, sketches—anything at all.
  - b. Using a different colored pen (e.g. **purple**) and all the resources you have available (notes, lecture recordings, the textbook, the Internet, etc.), fill in any information you did not originally include in your answer. Additionally, use a third color of pen (e.g. **red**) to correct anything that you wrote down incorrectly.
2. Once you have collected all the pertinent information to answer the question in one place, in a separate space work to come up with the most complete, yet concise answer possible that would correctly answer the question being asked.

### **Inking Prompt:**

Silvia is a 1-year-old cat whose growth rate has been well above average. Her legs are almost twice as long as those of other cats her age, and her weight is 30 lbs and still climbing. Silvia's owner decides to take her to the veterinarian, who draws blood, finds high levels of IGF-1 (insulin growth factor-1) in Silvia's blood. After a follow-up MRI scan the veterinarian determines that Silvia's growth is caused by a pituitary tumor.

- a. Draw a feedback loop depicting the effects of the tumor on the homeostasis of growth hormone. Identify the stimulus for release, integrating centers, afferent and efferent pathways (if applicable), and systemic responses.
- b. Explain how this condition led to Silvia's legs being nearly twice as long as they should be at this age.