

The Muscular System: Contraction of Whole Muscle

1. Which of the following contract in an all or none fashion?
 - a. Whole muscle
 - b. Single muscle fiber
2. The development of tension in a muscle, in response to a stimulus above threshold, is called a _____.
3. Identify the three phases of a muscle twitch from the following definitions:
 - a. Sarcomeres shorten _____
 - b. Sarcomeres return to resting length _____
 - c. Sarcomeres at resting length _____
4.
 - a. Temporal summation results from:
 - b. In temporal summation, you must _____ (↑or↓) the time interval between stimuli.
5. Below is a list of the five phases of temporal summation. Put in the correct order and describe each stage.

Order	Stage	Description
	Fatigue	
	Incomplete tetanus	
	Treppe	
	Complete tetanus	

6. In the Motor Unit Summation section, how many motor units were required to lift the weights when:
 - a. the weight was 160? _____
 - b. the weight was 80? _____

7. In the next lab simulation, what was:
- a. the threshold stimulus? _____ V
 - b. voltage when recruitment was obvious? _____ V
 - c. voltage when all motor units were recruited? _____ V
8. a. In the Length-Tension Relationship experiment, at what degree of stretch was the maximum tension developed? _____
- b. What would congestive heart failure be an example of?
