Name _____ **Per.** _____ **Date** _____

Section 7.1- Functions and Types of Muscles
Section 7.2- Anatomy of Muscle
Regular Anatomy

1. The ability to shorten in length, or _____, when stimulated by an electrical impulse, is a unique characteristic for muscles.
2. The contractile cells of muscle tissue are elongated and therefore are called _____ _____.

Match the 3 types of muscles, smooth, cardiac, or skeletal, to their descriptions or functions.

A. Smooth B. Cardiac C. Skeletal

_____ 3. Forms the wall of the heart.

_____ 4. Striated, long cylindrical, and multinucleated.

_____ 5. Located in the walls of hollow internal organs and passageways.

_____ 6. Voluntary control; always stimulated by the nervous system.

_____ 7. Involuntary control; branched, intercalated disks, striated, uninucleated.

_____ 8. Spindle-shaped, uninucleated; involuntary control.

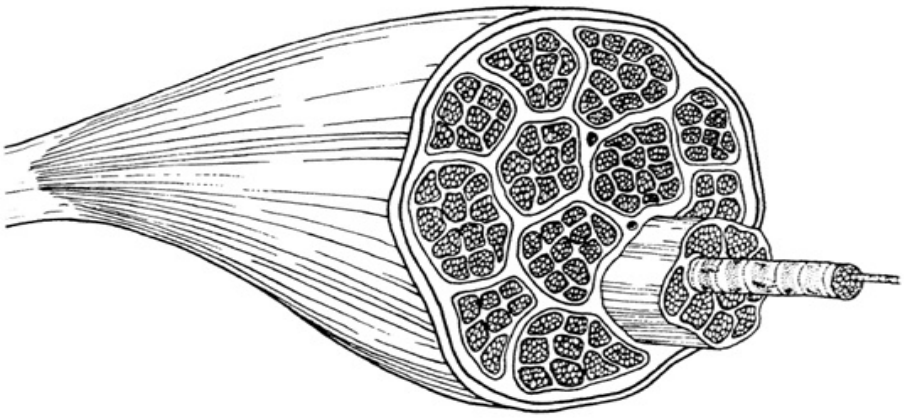
9. List the 5 functions of skeletal muscles.

Match the macro structures of skeletal muscle to its description or function.

_____ 1. Endomysium
_____ 2. Epimysium
_____ 3. Fascia
_____ 4. Fascicle
_____ 5. Muscle fiber
_____ 6. Myofibril
_____ 7. Perimysium
_____ 8. Tendon

a. long cylindrical contractile cells of skeletal muscle; covered by endomysium; contains sarcolemma, T-tubules, sarcoplasmic reticulum, and myofilaments; bundle of myofibrils
b. dense fibrous connective tissue that connects muscle to bone
c. connective tissue covering that surrounds a muscle fiber
d. cylindrical structures found within the muscle fiber that contains the myofilaments
e. the inner connective tissue below the fascia that surrounds a muscle
f. a bundle of muscle fibers that is covered by the perimysium
g. connective tissue covering that surrounds a fascicle
h. the outer connective tissue covering on top of the epimysium that surrounds a muscle

Using different colors and the list below, color and label the macrostructures and microstructures of skeletal muscle and its connective tissue coverings.

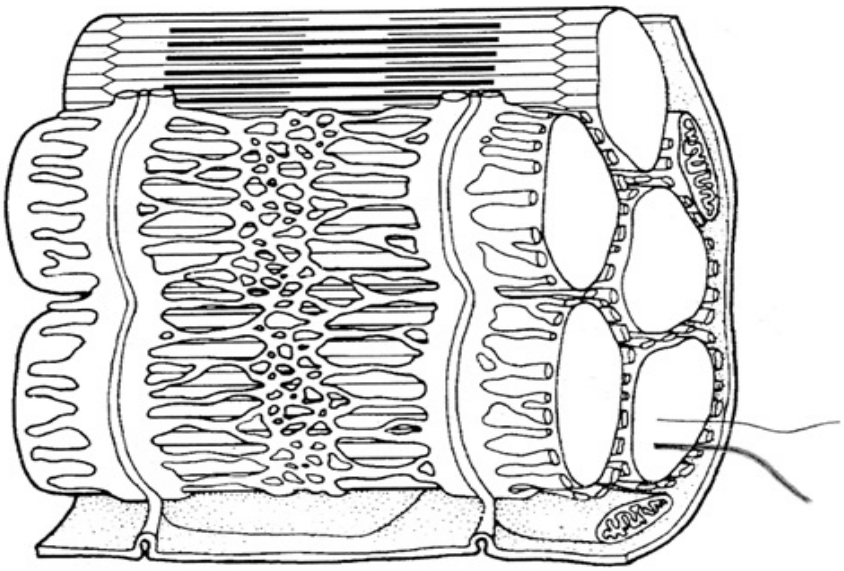


- Endomysium
- Epimysium
- Fascia
- Fascicle
- Muscle
- Muscle fiber
- Myofibril
- Perimysium
- Tendon

Match the structures of a muscle fiber to its description or function.

_____ 1.	Actin	a. membrane of the muscle fiber
_____ 2.	Mitochondria	b. invagination (inward extension) of the sarcolemma that surrounds the myofibril
_____ 3.	Myofibril	c. structures associated with T-tubules that stores calcium ions
_____ 4.	Myosin	d. the thin myofilament
_____ 5.	Sarcolemma	e. cylindrical structures found within the muscle fiber that contains the myofilaments
_____ 6.	Sarcomere	f. the basic, structural, contractile unit of a muscle
_____ 7.	Sarcoplasmic reticulum	g. the thick myofilament
_____ 8.	T-tubule	h. the organelle that creates energy for the muscle fiber

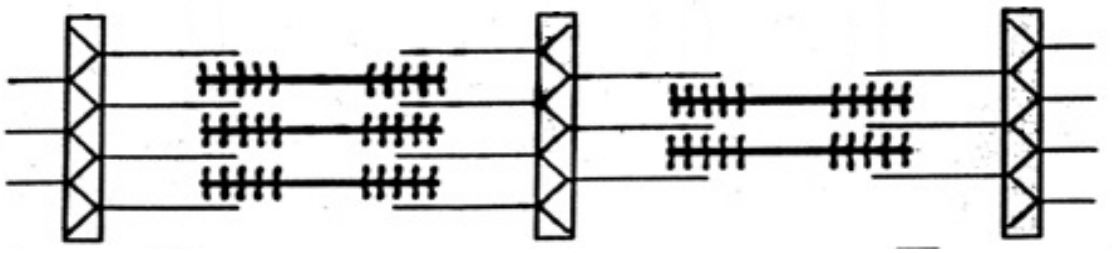
Using different colors and the list below, color and label the parts of a muscle fiber.



- Actin
- Mitochondria
- Myofibril
- Myosin
- Sarcolemma
- Sarcomere
- Sarcoplasmic reticulum
- Transverse (T) tubules

1. The cytoplasm of a muscle is called the _____.
2. The mitochondria breaks down the molecule _____ to produce the energy molecule _____ _____.

Using the list below, label the parts of a myofibril.

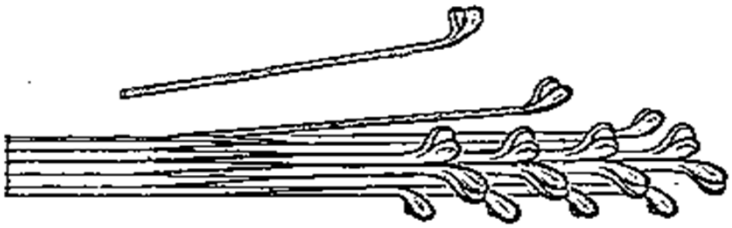


- A - band
- Actin
- H - zone
- I - band
- Myosin
- Sarcomere
- Z-line

5. The two myofilaments are _____, the thick myofilament, and _____, the thin filament.
   a. List the 2 parts of a myosin myofilament.

   b. List the 3 parts of an actin myofilament.

Using different colors and the list below, color and label the different parts of the myosin myofilament.



- Myosin head
- Rod

Using different colors and the list below, color and label the different parts of the actin myofilament.

- Active binding site
- G-actin
- Tropomyosin
- Troponin

6. List the structure of the myosin myofilament and the structure of the actin myofilament that perform a cross-bridge.