Chapter 13, The Spinal Cord, Spinal Nerves, and Somatic Reflexes

“Apply What You Know” Answers

p. 476—The mobility of the neck, relative smallness of the cervical vertebrae, and frequency of accidents involving violent movements or blows to the head make spinal cord injuries in the cervical region common. Spinal cord injuries do not occur at the L3 to L5 level because the spinal cord does not extend into those vertebrae.

p. 483—The differences in your perception of the two balls would be their weight (amount of pressure on your hand, amount of tension needed to keep your elbow flexed and hold the object up), texture (smooth or fuzzy), and temperature (iron conducts heat away from the skin faster and so feels cooler). The spinothalamic tract carries signals that would be involved in the perception of the object’s temperature, texture, and pressure on the skin; the cuneate fasciculus also contributes signals concerned with deep touch (pressure) and movement of the joint associated with the weight of the object.

p. 484—Individual nerve fibers are enclosed in an endoneurium, while muscle fibers are enclosed in an endomysium. Both nerve and muscle fibers are grouped in fascicles. Nerve fascicles are enclosed in perineurium and muscle fascicles in perimysium. Finally, a nerve as a whole is enclosed in epineurium and a muscle in epimysium.