

CHAPTER SEVEN

Answers to WHAT DID YOU LEARN?

1. The three regions of the axial skeleton are the skull, the vertebral column, and the thoracic cage.
2. The skull is composed of both cranial and facial bones.
3. Major cavities of the skull are the cranial cavity, orbits, oral cavity, nasal cavity, and paranasal sinuses.
4. The coronal suture represents the articulation between the anterior frontal bone and the more posterior parietal bones. The lambdoid suture is the articulation between the parietal bones and the occipital bone. The sagittal suture is the articulation between the right and left parietal bones. The squamosal suture articulates the temporal bone and the parietal bone on each side of the head.
5. The three regions of the temporal bone are the petrous, squamous, and tympanic regions. The mastoid process is located in the petrous region.
6. The superior and inferior nuchal lines are attachment sites for both muscles and ligaments that balance the weight of the head over the vertebrae of the neck and stabilize its articulation at the occipital condyles. Male skulls tend to have more pronounced nuchal lines than do female skulls.
7. The zygomatic bones are commonly referred to as the “cheekbones.”
8. Most of the hard palate is formed by palatine processes of the maxillae. The posterior portion of the hard palate is formed by the horizontal plate of each palatine bone.
9. The ethmoid, frontal, maxillary, and sphenoid bones of the skull contain the paranasal sinuses.
10. The three tiny bones of the auditory ossicles are the malleus, the incus, and the stapes.
11. Muscles and ligaments form the only connections between the hyoid bone and other skeletal structures.
12. The female skull is generally more delicate than the male skull, which is robust, with prominent muscle markings. The external surface of the occipital bone in a female is relatively smooth, with no major bony projections, while the male skull has well-demarcated nuchal lines and a prominent bump for the external occipital protuberance. The mastoid process in a female is smaller than that of a male. The forehead in a female is usually more vertically oriented and rounded than in a male. The female’s supraorbital margin exhibits a thin, sharp border, in contrast with the male’s thick, rounded border. Females have less prominent and bulky superciliary arches than males. The mandible is smaller and lighter in a female skull than in a male. Both the sinuses and teeth in a female skull are smaller than those in a male skull.
13. The posterior fontanel closes at about 9 months, while the anterior fontanel closes at about 15 months.
14. The five vertebral regions, proceeding from superior to inferior, are cervical, thoracic, lumbar, sacral, and coccygeal.

15. The odontoid process, or dens, is located on the second cervical vertebra, called the axis. A fracture to the odontoid process would fracture the axis.
16. The three components of the sternum are the manubrium, the body (gladiolus), and the xiphoid process. Ribs 1–7 articulate directly with the sternum.
17. The first seven pairs of ribs are called true ribs. At the anterior body wall, the true ribs connect individually to the sternum by separate cartilaginous extensions, the costal cartilages. Ribs 8–12 are called false ribs because they do not attach directly to the sternum.