7. Figure 5-2A is a midlevel, cross-sectional view of the diaphysis of the femur. Label the membrane that lines the cavity and the membrane that covers the outside surface.

Figure 5-2B is a drawing of a longitudinal section of the femur. Color the bone tissue gold. Do not color the articular cartilage; leave it white. Select different colors for the bone regions listed at the coding circles below. Color the coding circles and the corresponding regions on the drawing. Complete Figure 5-2B by labeling compact bone and spongy bone.

- Diaphysis
- Area where red marrow is found
- Epiphyseal plate
- Area where yellow marrow is found

![Figure 5-2](image_url)

**Figure 5-2**

**AXIAL SKELETON**

**Skull**

8. Using key choices, identify the bones indicated by the following descriptions. Enter the appropriate term or letter in the answer blanks.

**Key Choices**

A. Ethmoid  E. Mandible  I. Palatines  L. Temporals
B. Frontal  F. Maxillae  J. Parietals  M. Vomer
C. Hyoid  G. Nasals  K. Sphenoid  N. Zygomatic
D. Lacrimals  H. Occipital
1. Forehead bone
2. Cheekbone
3. Lower jaw
4. Bridge of nose
5. Posterior part of hard palate
6. Much of the lateral and superior cranium
7. Most posterior part of cranium
8. Single, irregular, bat-shaped bone, forming part of the cranial floor
9. Tiny bones, bearing tear ducts
10. Anterior part of hard palate
11. Superior and middle nasal conchae formed from its projections
12. Site of mastoid process
13. Site of sella turcica
14. Site of cribriform plate
15. Site of mental foramen
16. Site of styloid process
17. Four bones, containing paranasal sinuses
18. Site of external acoustic meatus
19. Nasal septum
20. Its condyles articulate with the atlas
21. Middle ear found here
22. Foramen magnum contained here
23. Nasal septum
24. Bears an upward protrusion, the "cock's comb," or crista galli
25. Site of external acoustic meatus
9. Figure 5–3, A–C shows lateral, anterior, and inferior views of the skull. Select different colors for the bones listed below and color the coding circles and corresponding bones in the figure. Complete the figure by labeling the bone markings indicated by leader lines.

- Frontal
- Sphenoid
- Zygomatic
- Nasal
- Parietal
- Ethmoid
- Palatine
- Lacrimal
- Mandible
- Temporal
- Occipital
- Vomer
- Maxilla

![Figure 5-3, A-C](image-url)
10. An anterior view of the skull, showing the positions of the sinuses, is provided in Figure 5–4. First select different colors for each of the sinuses and use them to color the coding circles and the corresponding structures on the figure. Then briefly answer the following questions concerning the sinuses.

1. What are sinuses? __________________________________________________________

2. What purpose do they serve in the skull? _________________________________

3. Why are they so susceptible to infection? _________________________________

- Sphenoid sinus
- Ethmoid sinuses
- Frontal sinus
- Maxillary sinus

Figure 5–4
Vertebral Column

11. Using the key choices, correctly identify the vertebral parts/areas described as follows. Enter the appropriate term(s) or letter(s) in the spaces provided.

**Key Choices**

| A. Body | C. Spinous process | E. Transverse process |
| B. Intervertebral foramina | D. Superior articular process | F. Vertebral arch |

_____________ 1. Structure that encloses the nerve cord
_____________ 2. Weight-bearing portion of the vertebra
_____________ 3. Provide(s) levers for the muscles to pull against
_____________ 4. Provide(s) an articulation point for the ribs
_____________ 5. Openings providing for exit of spinal nerves

12. The following statements provide distinguishing characteristics of the vertebrae composing the vertebral column. Using key choices, identify each described structure or region by inserting the appropriate term(s) or letter(s) in the spaces provided.

**Key Choices**

| A. Atlas | D. Coccyx | F. Sacrum |
| B. Axis | E. Lumbar vertebra | G. Thoracic vertebra |
| C. Cervical vertebra—typical |

_____________ 1. Type of vertebra(e) containing foramina in the transverse processes, through which the vertebral arteries ascend to reach the brain
_____________ 2. Its dens provides a pivot for rotation of the first cervical vertebra
_____________ 3. Transverse processes have facets for articulation with ribs; spinous process points sharply downward
_____________ 4. Composite bone; articulates with the hip bone laterally
_____________ 5. Massive vertebrae; weight-sustaining
_____________ 6. Tailbone; vestigial fused vertebrae
_____________ 7. Supports the head; allows the rocking motion of the occipital condyles
_____________ 8. Seven components; unfused
_____________ 9. Twelve components; unfused
13. Complete the following statements by inserting your answers in the answer blanks.

1. In describing abnormal curvatures, it could be said that (1) is an exaggerated thoracic curvature, and in (2) the vertebral column is displaced laterally.

2. Invertebral discs are made of (3) tissue. The discs provide (4) to the spinal column.

14. Figure 5–5, A–D shows superior views of four types of vertebrae. In the spaces provided below each vertebra, indicate in which region of the spinal column it would be found. In addition, specifically identify Figure 5–5A. Where indicated by leader lines, identify the vertebral body, spinous and transverse processes, superior articular processes, and vertebral foramen.
15. Figure 5–6 is a lateral view of the vertebral column. Identify each numbered region of the column by listing in the numbered answer blanks the region name first and then the specific vertebrae involved (for example, sacral region, S# to S#). Also identify the modified vertebrae indicated by numbers 6 and 7 in Figure 5–6. Select different colors for each vertebral region and use them to color the coding circles and the corresponding regions.

Figure 5–6
Bony Thorax

16. Complete the following statements referring to the bony thorax by inserting your responses in the answer blanks.

1. The organs protected by the thoracic cage include the ___________ and the ___________. Ribs 1 through 7 are called ___________ ribs, whereas ribs 8 through 12 are called ___________ ribs. Ribs 11 and 12 are also called ___________ ribs. All ribs articulate posteriorly with the ___________, and most connect anteriorly to the ___________.

2. ___________

3. ___________

4. ___________

5. ___________

6. ___________

7. ___________

8. ___________

17. Figure 5–7 is an anterior view of the bony thorax. Select different colors to identify the structures below and color the coding circles and corresponding structures. Then label the subdivisions of the sternum indicated by leader lines.

- All true ribs
- All false ribs
- Costal cartilages
- Sternum

Figure 5–7