

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:

- | | | |
|-------------------------|-------------------------------|--------------------|
| Body | C. Spinous process | Transverse process |
| Intervertebral foramina | D. Superior articular process | F. Vertebral arch |

- | | |
|-------|---|
| _____ | 1. Structure that encloses the nerve cord |
| _____ | 2. Weight-bearing portion of the vertebra |
| _____ | Provide(s) levers for the muscles to pull against |
| _____ | 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:

- | | | |
|---------------------------|-----------------|-------------------|
| Atlas | Coccyx | Sacrum |
| Axis | Lumbar vertebra | Thoracic vertebra |
| 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 |

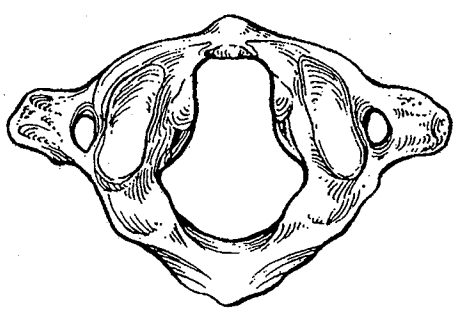
13. Complete the following statements by inserting your answers in the answer blanks.

- _____ X
- Scoliosis 2.
- Fibrocartilage 3.
- flexibility 4.

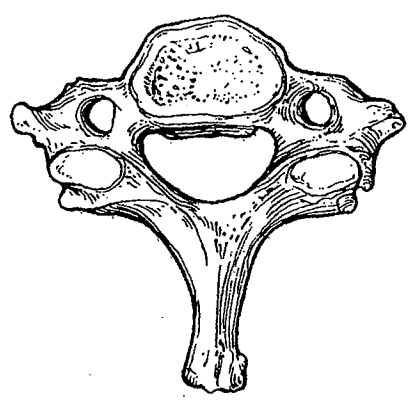
In describing abnormal curvatures, it could be said that (1) is an exaggerated thoracic curvature, and in (2) the vertebral column is displaced laterally.

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

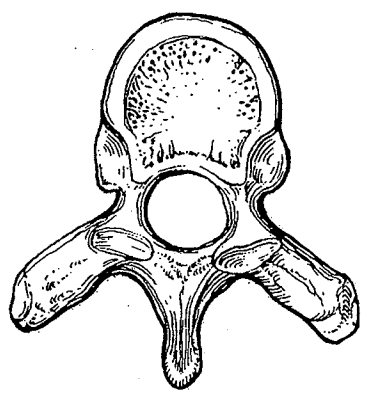
14. Figure 5-5 (A-D) shows four types of vertebrae. In the spaces provided below each vertebra, indicate in which region of the spinal column it would be found. In addition, specifically identify Figure 5-5 (A).



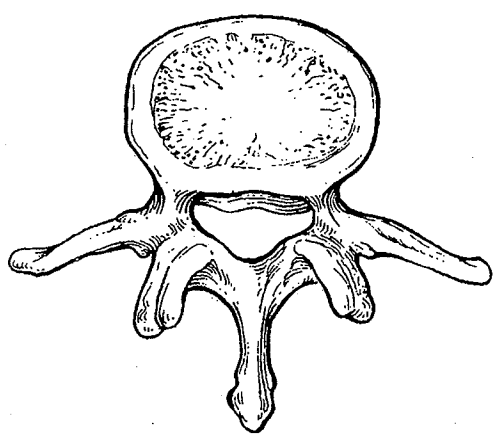
A _____



B _____



C _____

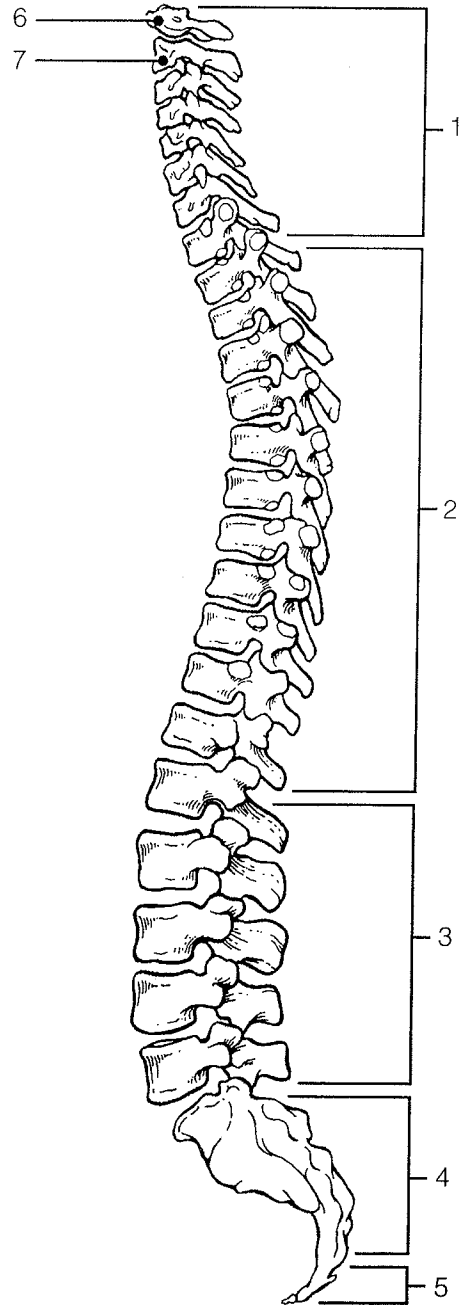


D _____

Figure 5-5

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.

- 1. _____ ○
- 2. _____ ○
- 3. _____ ○
- 4. _____ ○
- 5. _____ ○
- 6. _____ ○
- 7. _____ ○



Use the following to learn these bones and bone parts:

- pages 203-238 in your text
- Human skeleton



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 <u>(1)</u> and the <u>(2)</u> . Ribs 1 through 7 are called <u>(3)</u> ribs, whereas ribs 8 through 12 are called <u>(4)</u> ribs. Ribs 11 and 12 are also called <u>(5)</u> ribs. All ribs articulate posteriorly with the <u>(6)</u> , and most connect anteriorly to the <u>(7)</u> , either directly or indirectly. |
| _____ | 2. | |
| _____ | 3. | |
| _____ | 4. | |
| _____ | 5. | The general shape of the thoracic cage is <u>(8)</u> . |
| _____ | 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.

- | | |
|---|--------------------------------------|
| <input type="radio"/> All true ribs | <input type="radio"/> All false ribs |
| <input type="radio"/> Costal cartilages | <input type="radio"/> Sternum |

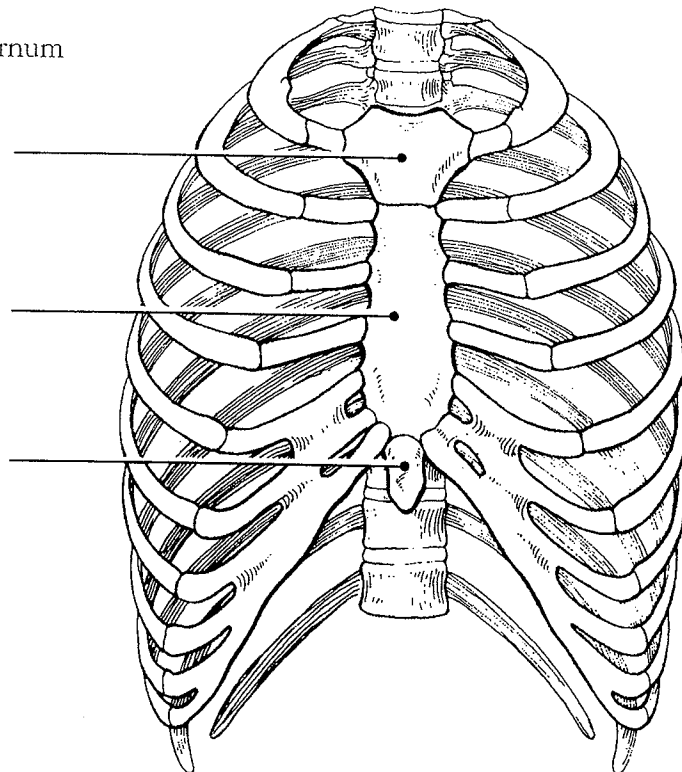


 Figure 5-7

Appendicular Skeleton

Several bones forming part of the upper limb and/or shoulder girdle are shown in Figures 5-8 to 5-11. Follow the specific directions for each figure.

18. Identify the bone in Figure 5-8. Insert your answer in the blank below the illustration. Select different colors for each structure listed below and use them to color the coding circles and the corresponding structures in the diagram.

- | | |
|--|--------------------------------------|
| <input type="radio"/> Spine | <input type="radio"/> Glenoid cavity |
| <input type="radio"/> Coracoid process | <input type="radio"/> Acromion |

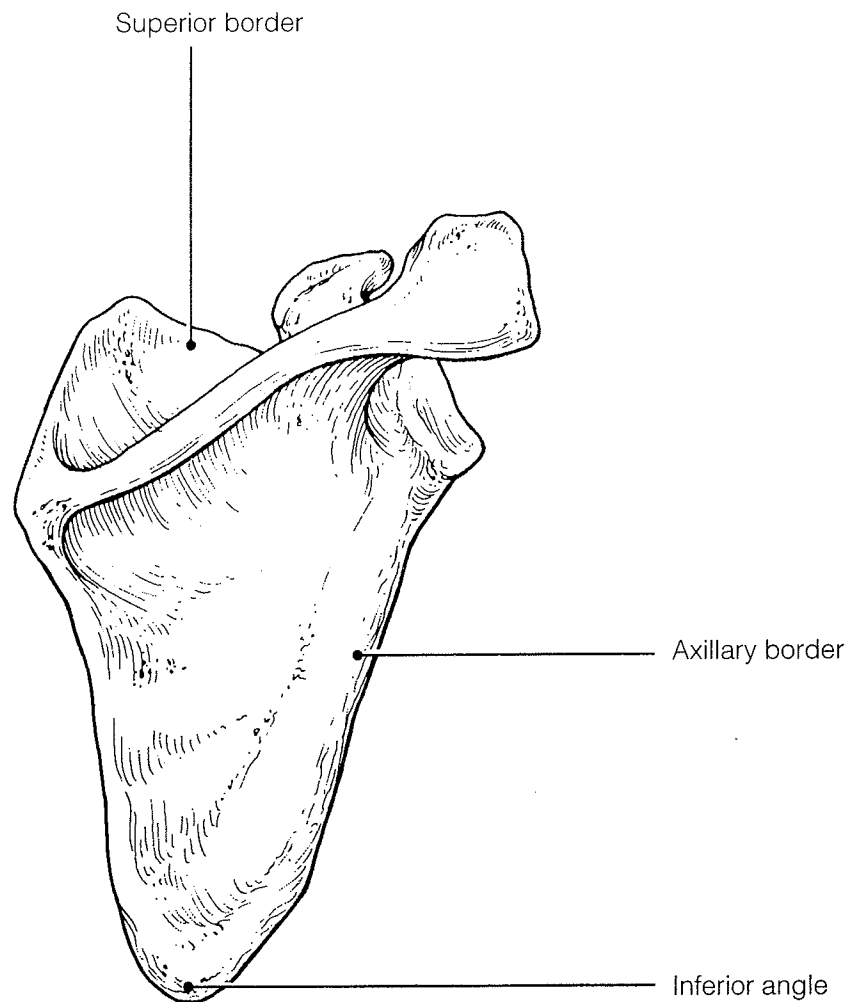


Figure 5-8

19. Identify the bone in Figure 5-9. Insert your answer in the answer blank below the illustration. Select different colors for each structure listed and use them to color the coding circles and the corresponding structures in the diagram. Then complete the illustration by inserting a leader line and labeling the deltoid tuberosity.

- Head Capitulum Trochlea Shaft

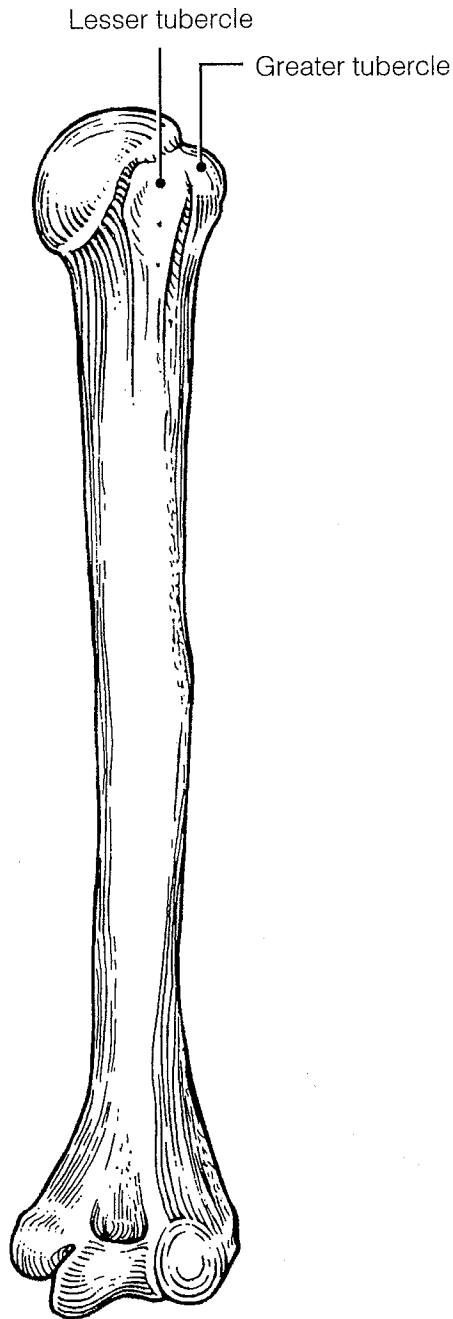


Figure 5-9

20. Identify the two bones in Figure 5-10 by labeling the leader lines identified as (A) and (B). Color the bones different colors. Using the following terms, complete the illustration by labeling all bone markings provided with leader lines.

Olecranon process

Trochlear notch

Coronoid process

Radial tuberosity

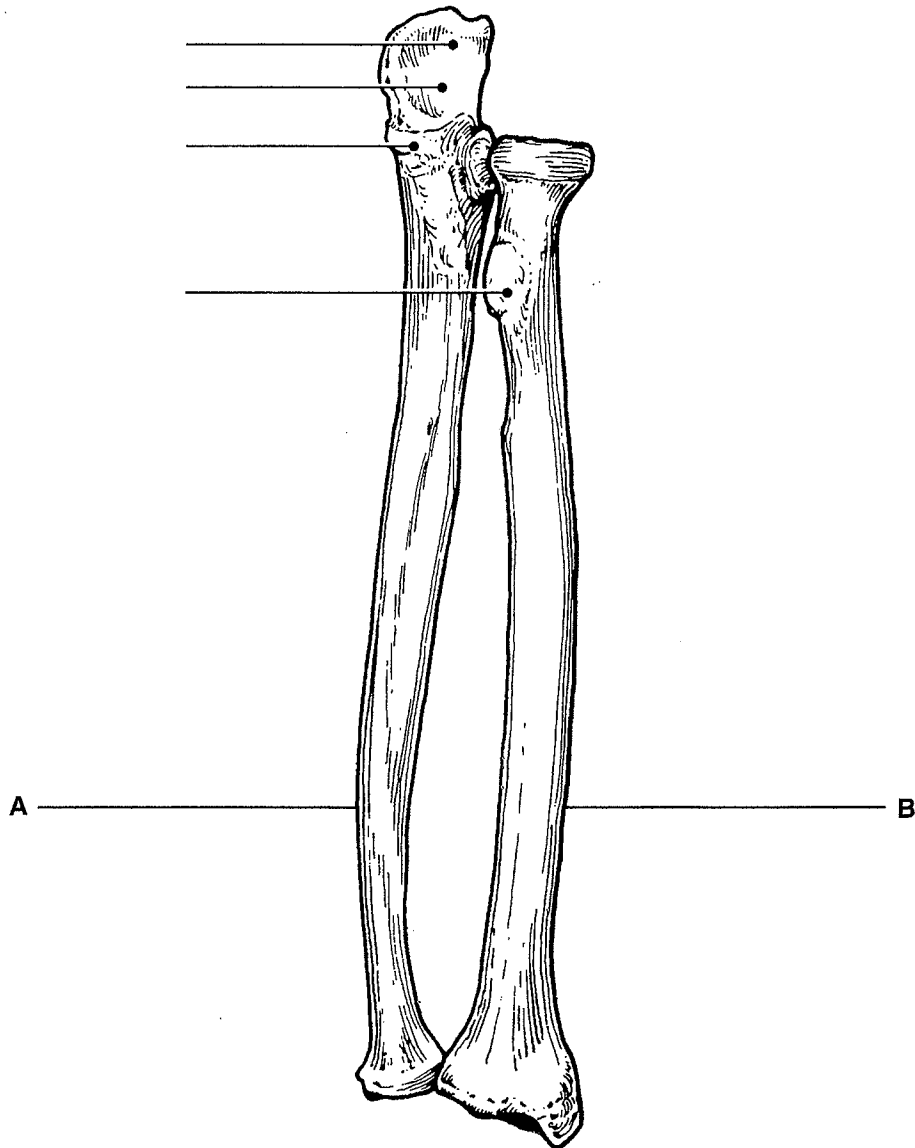


Figure 5-10

21. Figure 5-11 is a diagram of the hand. Select different colors for the following structures, and use them to color the coding circles and the corresponding structures in the diagram.

Carpals

Phalanges

Metacarpals

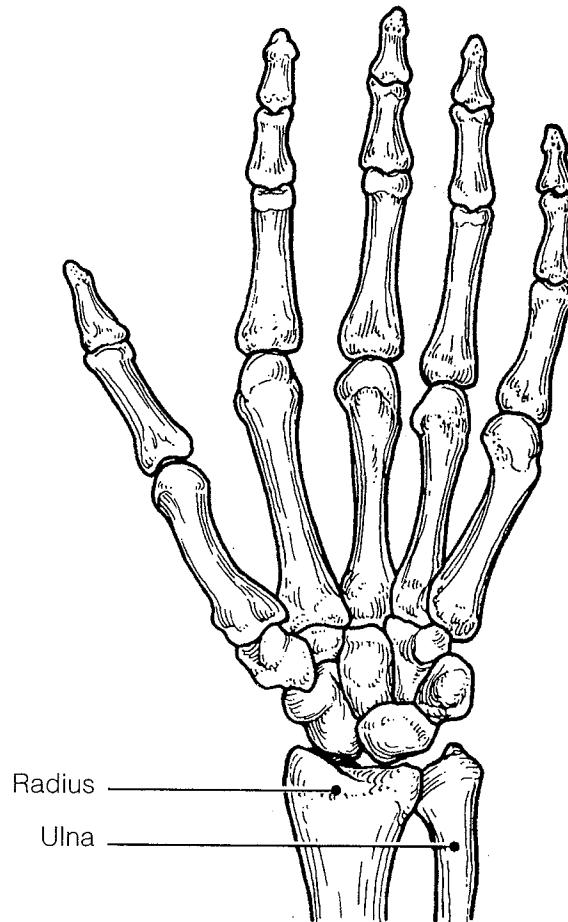


Figure 5-11

22. Compare the pectoral and pelvic girdles by choosing descriptive terms from the key choices. Insert the appropriate key letters in the answer blanks.

KEY CHOICES:

- A. Flexibility
- B. Massive
- C. Lightweight
- D. Shallow socket for limb attachment
- E. Deep, secure socket for limb attachment
- F. Weight-bearing

Pectoral: _____, _____, _____ Pelvic: _____, _____, _____

- _____ 17. Bones of the ankle
- _____ 18. Bones forming the instep of the foot
- _____ 19. Opening in a coxal bone formed by the pubic and ischial rami
- _____ 20. Sites of muscle attachment on the proximal end of the femur
- _____ 21. Tarsal bone that articulates with the tibia

25. Figure 5-12 is a diagram of the articulated pelvis. Identify the bones and bone markings indicated by leader lines on the figure. Select different colors for the structures listed below and use them to color the coding circles and the corresponding structures in the figure. Also, label the dashed line showing the dimensions of the true pelvis and that showing the diameter of the false pelvis. Complete the illustration by labeling the following bone markings: obturator foramen, iliac crest, anterior superior iliac spine, ischial spine, pubic ramus, and pelvic brim. Last, list three ways in which the female pelvis differs from the male pelvis and insert your answers in the answer blanks.

- Coxal bone
- Pubic symphysis
- Sacrum
- Acetabulum

Color-code, then label + answer circled items only.

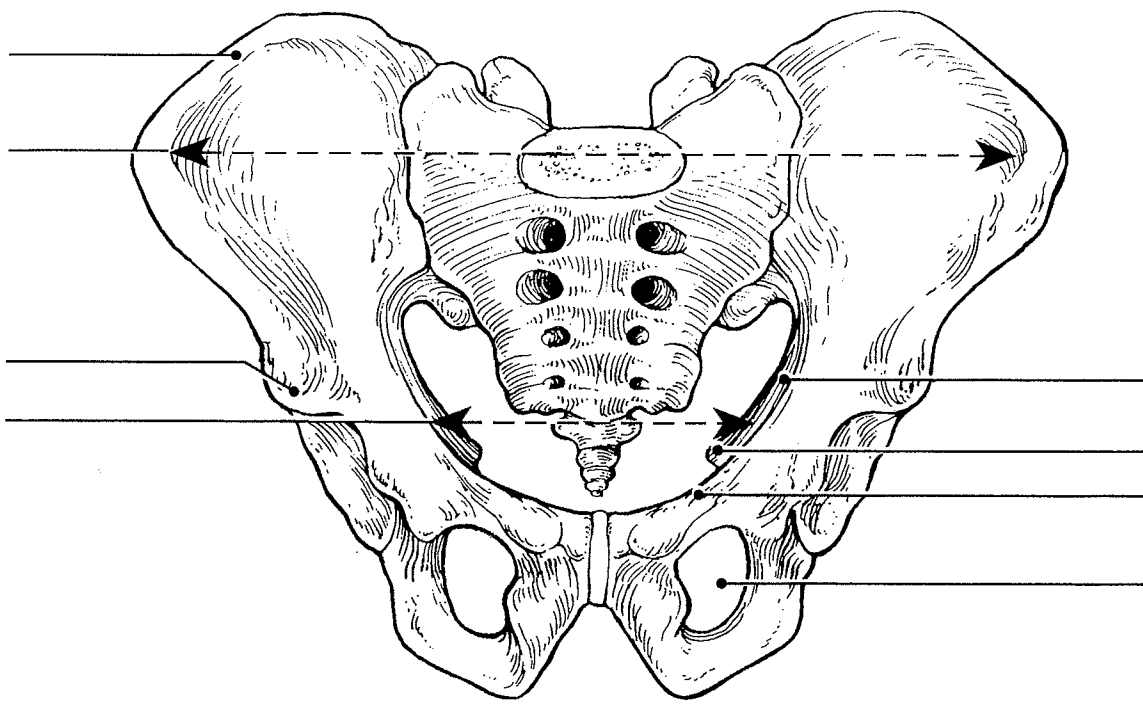


Figure 5-12

- 1. _____
- 2. _____
- 3. _____

26. The bones of the thigh and the leg are shown in Figure 5-13. Identify each and put your answers in the blanks below the diagrams. Select different colors for those structures listed below that are accompanied by a color-coding circle and use them to color in the coding circles and corresponding structures on the diagram. Complete the illustration by inserting the terms indicating bone markings at the ends of the appropriate leader lines in the figure.

○ <u>Femur</u>	○ <u>Tibia</u>	○ <u>Fibula</u>
Head of femur	Anterior crest of tibia	Head of fibula
Intercondylar eminence	Lesser trochanter	Medial malleolus
Tibial tuberosity	Greater trochanter	Lateral malleolus

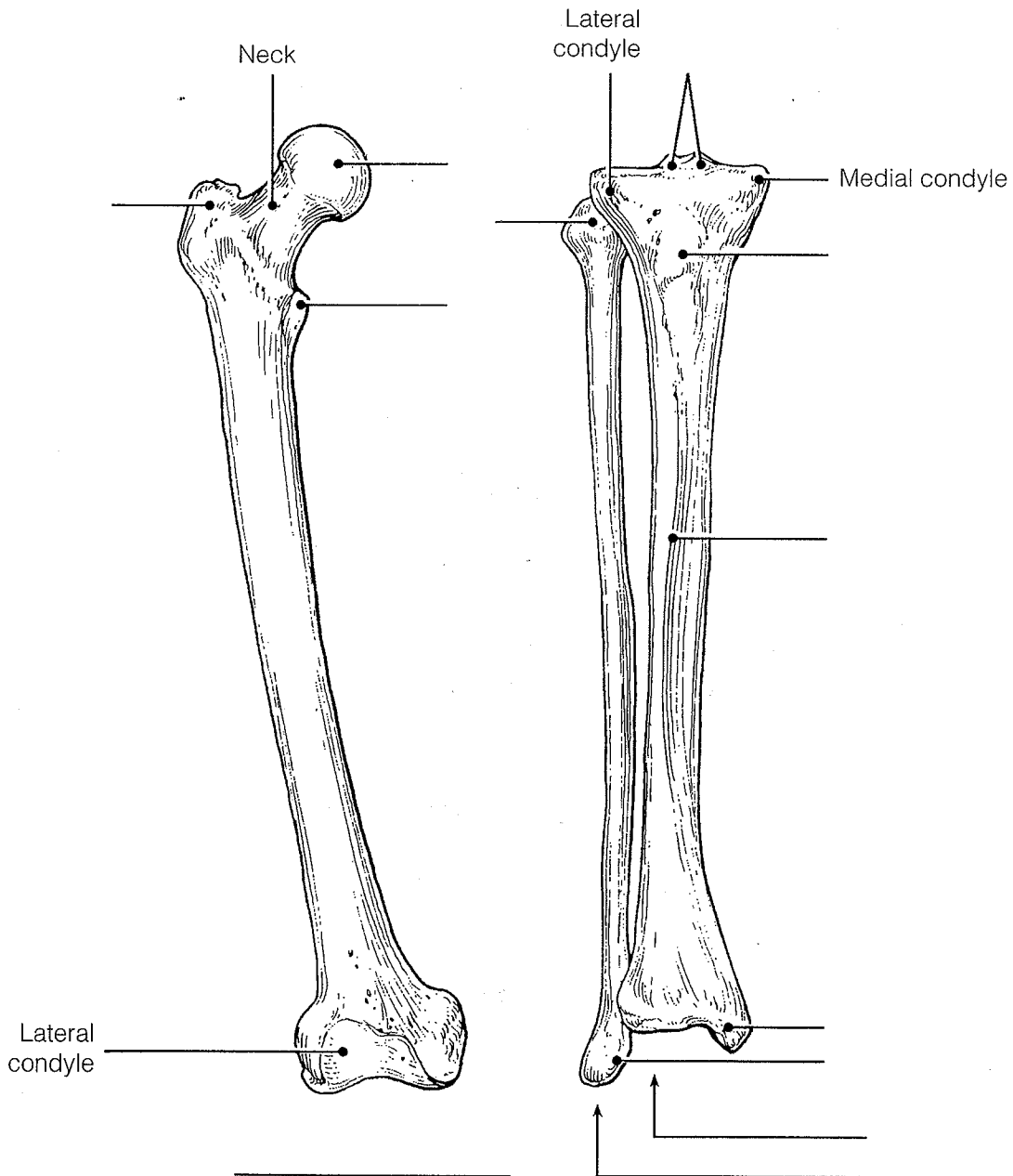




Figure 5-13

27. For each of the following statements that is true, insert T in the answer blank. If any of the statements are false, correct the underlined term by inserting the correct term in the answer blank.

- _____ 1. The pectoral girdle is formed by the articulation of the hip bones and the sacrum.
- _____ 2. Bones present in both the hand and the foot are carpals.
- _____ 3. The tough, fibrous connective tissue covering of a bone is the periosteum.
-  ~~X~~ 4. The point of fusion of the three bones forming a coxal bone is the glenoid cavity.
-  ~~X~~ 5. The large nerve that must be avoided when giving injections into the buttock muscles is the femoral nerve.
- _____ 6. The long bones of a fetus are constructed of hyaline cartilage.
- _____ 7. Bones that provide the most protection to the abdominal viscera are the ribs.
- _____ 8. The largest foramen in the skull is the foramen magnum.

28. Circle the term that does not belong in each of the following groupings.

- ① Tibia Ulna Fibula Femur
- ② Body Spinous process Transverse process Atlas
- ~~X~~ Hematopoiesis Red marrow Yellow marrow Spongy bone
- ④ Manubrium Body Xiphoid process Styloid process
- ⑤ Skull Rib cage Vertebral column Pelvis
- ⑥ Ischium Scapula Ilium Pubis
- ⑦ Mandible Frontal bone Temporal bone Occipital bone
- ~~X~~ Meatus Foramen Condyle Fissure
- ~~X~~ Cribriform plate Ethmoid Cock's comb Sphenoid
- ~~X~~ Canaliculi Marrow cavity Perforating canals Central canals

29. Figure 5-14 on p. 78 is a diagram of the articulated skeleton. Identify all bones or groups of bones by writing the correct labels at the end of the leader lines. Then, select two different colors for the bones of the axial and appendicular skeletons and use them to color in the coding circles and corresponding structures in the diagram.

Axial skeleton

Appendicular skeleton

*Label
and
color*

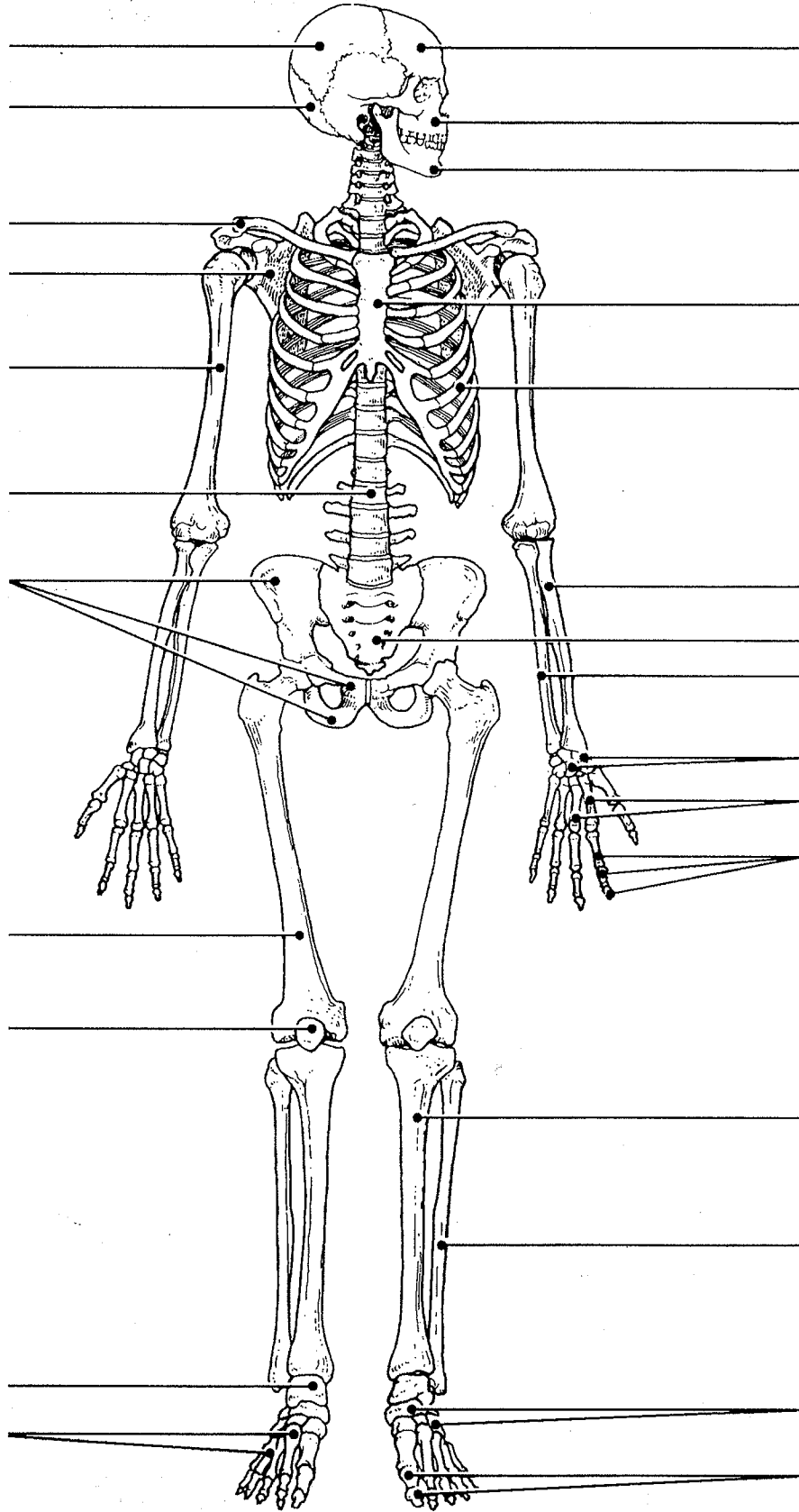


Figure 5-14