

NAME _____ LAB TIME/DATE _____

REVIEW SHEET
exercise

10

The Axial Skeleton

The Skull

1. The skull is one of the major components of the axial skeleton. Name the other two:

vertebral column and bony thorax

What structures do each of these areas protect? The vertebral column protects the spinal cord. The bony thorax protects the heart, lungs, esophagus, and great vessels (aorta and venae cavae) of the thorax. The skull protects the brain.

2. Define *suture*: Fibrous joint between skull bones.

3. With one exception, the skull bones are joined by sutures. Name the exception. Joint(s) between the mandible and temporal bones.

4. What are the four major sutures of the skull, and what bones do they connect?

a. Sagittal suture: Parietal bones.

b. Coronal suture: Parietal bones and frontal bone.

c. Squamous suture: Parietal bone and temporal bone.

d. Lambdoidal suture: Parietal bones and occipital bone.

5. Name the eight bones of the cranium.

frontal occipital right parietal left parietal

sphenoid ethmoid right temporal left temporal

6. Give two possible functions of the sinuses. (1) Lighten the skull, (2) resonance chambers for speech.

7. What is the orbit? Bony socket for the eye.

What bones contribute to the formation of the orbit? Ethmoid, lacrimal, frontal, sphenoid, zygomatic, maxillary, palatine

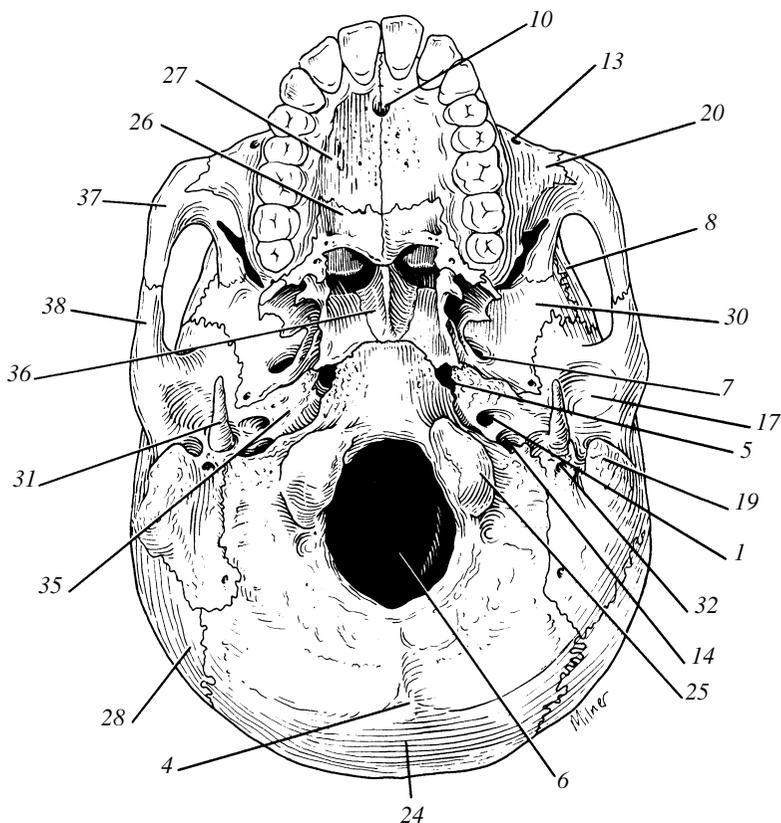
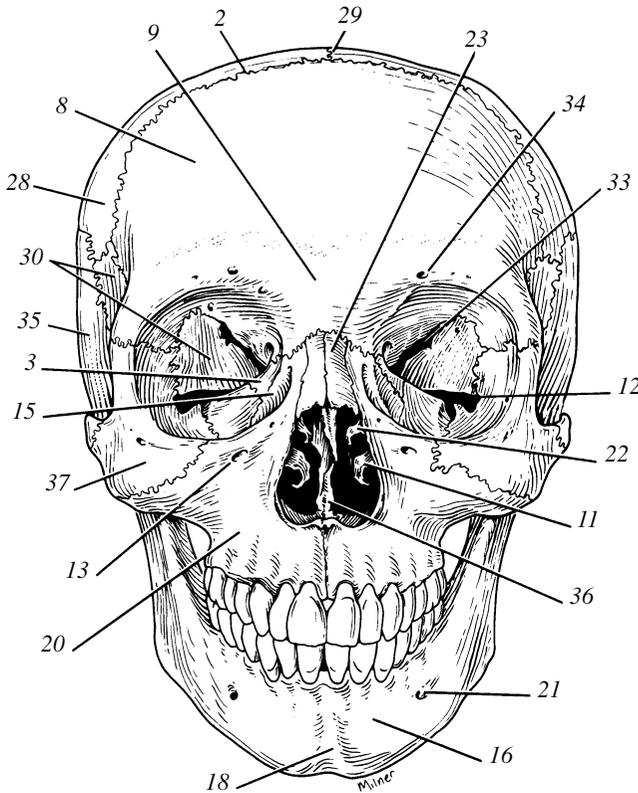
8. Why can the sphenoid bone be called the keystone of the cranial floor? It articulates with all of the other cranial bones.

9. What is a cleft palate? An opening in the palate resulting in a continuity between the oral and nasal cavities due to the failure of the palatine bones or palatine processes of the maxillary bones to fuse properly.

10. Match the bone names in column B with the descriptions in column A.

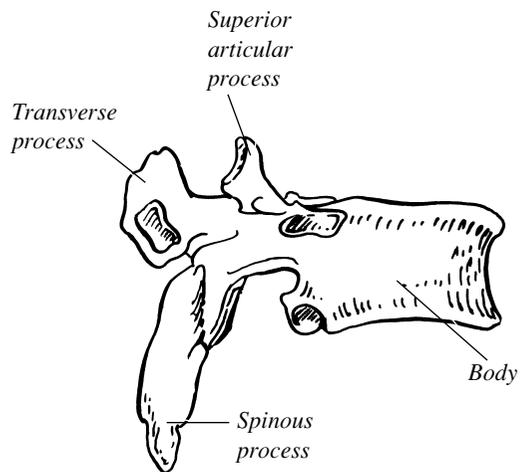
| Column A | Column B |
|--|--------------|
| <u>b; frontal</u> 1. forehead bone | |
| <u>n; zygomatic</u> 2. cheekbone | a. ethmoid |
| <u>e; mandible</u> 3. lower jaw | b. frontal |
| <u>g; nasal</u> 4. bridge of nose | c. hyoid |
| <u>i; palatine</u> 5. posterior bones of the hard palate | d. lacrimal |
| <u>j; parietal</u> 6. much of the lateral and superior cranium | e. mandible |
| <u>h; occipital</u> 7. most posterior part of cranium | f. maxilla |
| <u>k; sphenoid</u> 8. single, irregular, bat-shaped bone forming part of the cranial floor | g. nasal |
| <u>d; lacrimal</u> 9. tiny bones bearing tear ducts | h. occipital |
| <u>f; maxilla</u> 10. anterior part of hard palate | i. palatine |
| <u>a; ethmoid</u> 11. superior and medial nasal conchae formed from its projections | j. parietal |
| <u>l; temporal</u> 12. site of mastoid process | k. sphenoid |
| <u>k; sphenoid</u> 13. site of sella turcica | l. temporal |
| <u>a; ethmoid</u> 14. site of cribriform plate | m. vomer |
| <u>e; mandible</u> 15. site of mental foramen | n. zygomatic |
| <u>l; temporal</u> 16. site of styloid processes | |
| <u>a; ethmoid</u> , <u>b; frontal</u> , <u>f; maxilla</u> , and | |
| <u>k; sphenoid</u> 17. four bones containing paranasal sinuses | |
| <u>h; occipital</u> 18. condyles here articulate with the atlas | |
| <u>h; occipital</u> 19. foramen magnum contained here | |
| <u>c; hyoid</u> 20. small U-shaped bone in neck, where many tongue muscles attach | |
| <u>l; temporal</u> 21. middle ear found here | |
| <u>m; vomer (a; ethmoid)</u> 22. nasal septum | |
| <u>a; ethmoid</u> 23. bears an upward protrusion, the “cock’s comb,” or crista galli | |
| <u>e; mandible</u> , <u>f; maxilla</u> 24. contain alveoli bearing teeth | |

11. Using choices from the numbered key to the right, identify all bones and bone markings provided with leader lines in the two diagrams below.

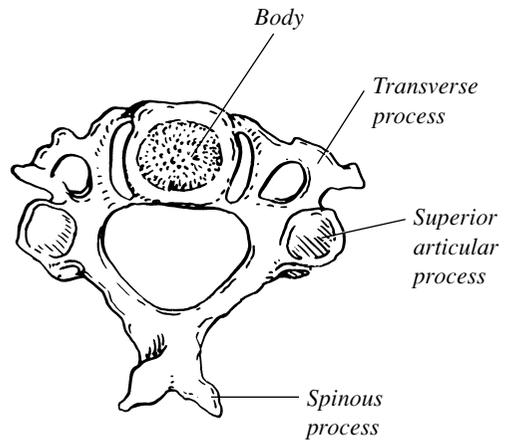


1. carotid canal
2. coronal suture
3. ethmoid bone
4. external occipital protuberance
5. foramen lacerum
6. foramen magnum
7. foramen ovale
8. frontal bone
9. glabella
10. incisive fossa
11. inferior nasal concha
12. inferior orbital fissure
13. infraorbital foramen
14. jugular foramen
15. lacrimal bone
16. mandible
17. mandibular fossa
18. mandibular symphysis
19. mastoid process
20. maxilla
21. mental foramen
22. middle nasal concha of ethmoid
23. nasal bone
24. occipital bone
25. occipital condyle
26. palatine bone
27. palatine process of maxilla
28. parietal bone
29. sagittal suture
30. sphenoid bone
31. styloid process
32. stylomastoid foramen
33. superior orbital fissure
34. supraorbital foramen
35. temporal bone
36. vomer
37. zygomatic bone
38. zygomatic process of temporal bone

14. Identify specifically each of the vertebra types shown in the diagrams below. Also identify and label the following markings on each: transverse processes, spinous process, body, superior articular processes.



thoracic vertebra



cervical vertebra

15. Describe how a spinal nerve exits from the vertebral column. Via the intervertebral foramina found between the pedicles of adjacent vertebrae.

16. Name two factors/structures that allow for flexibility of the vertebral column.
Intervertebral discs and curvatures

17. What kind of tissue composes the intervertebral discs? Fibrocartilage

18. What is a herniated disc? A ruptured disc in which a portion of the disc protrudes outward.

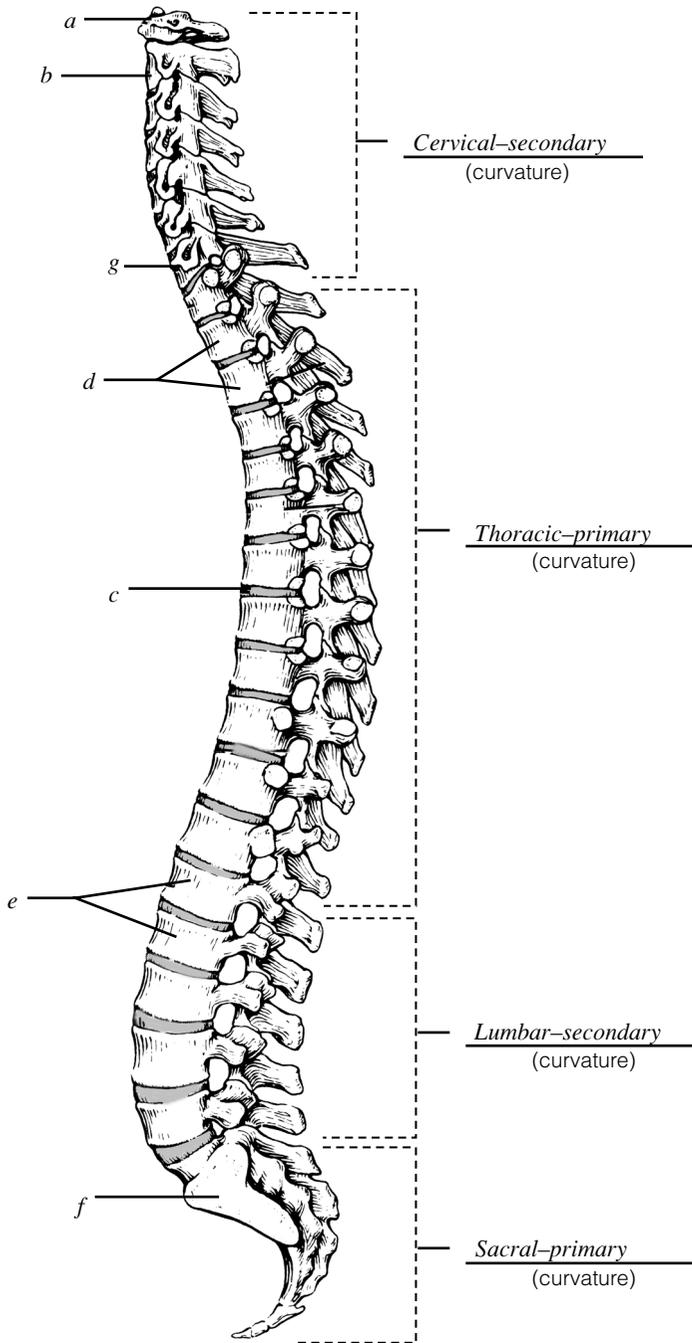
What problems might it cause? It might compress a nerve, leading to pain and possibly paralysis.

19. Which two spinal curvatures are obvious at birth? Thoracic and sacral

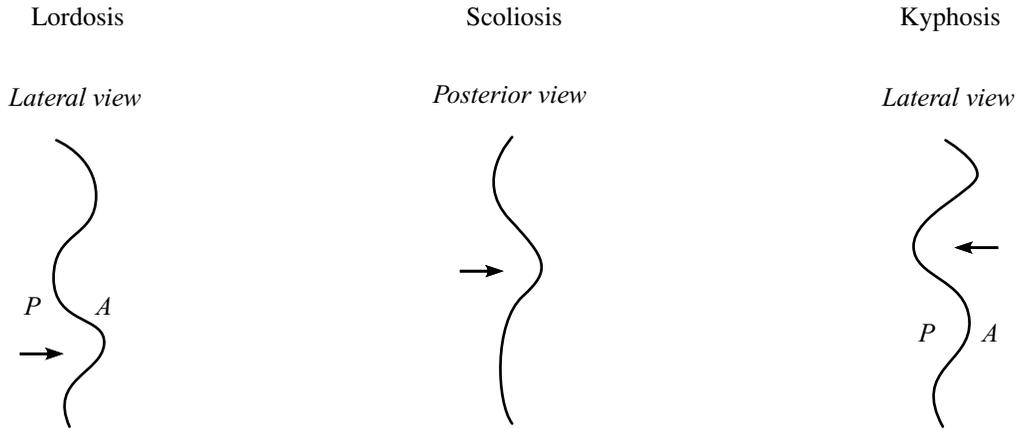
Under what conditions do the secondary curvatures develop? The cervical curvature develops when the baby begins to raise its head independently. The lumbar curvature forms when the baby begins to walk (assumes upright posture).

20. On this illustration of an articulated vertebral column, identify each curvature indicated and label it as a primary or a secondary curvature. Also identify the structures provided with leader lines, using the letters of the terms listed below.

- a. atlas
- b. axis
- c. a disc
- d. two thoracic vertebrae
- e. two lumbar vertebrae
- f. sacrum
- g. vertebra prominens



21. Diagram the abnormal spinal curvatures named below. (Use posterior or lateral views as necessary and label the views shown.)



Arrows indicate area(s) of exaggerated curvature

The Bony Thorax

22. The major components of the thorax (excluding the vertebral column) are the ribs and the sternum.

23. Differentiate between a true rib and a false rib. A true rib has its own costal cartilage attachment to the sternum; a false rib attaches indirectly or not at all.

Is a floating rib a true or a false rib? False

24. What is the general shape of the thoracic cage? Inverted cone shape

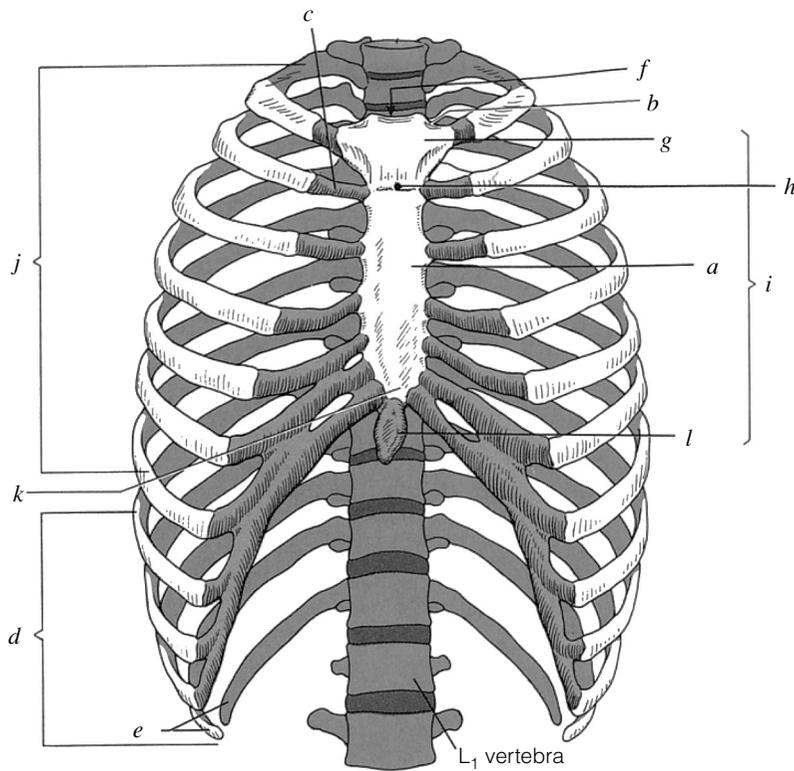
25. Provide the more scientific name for the following rib types.

a. True ribs Vertebrosteral ribs

b. False ribs (not including c) Vertebrochondral ribs

c. Floating ribs Vertebral ribs

26. Using the terms at the right, identify the regions and landmarks of the bony thorax.



- a. body
- b. clavicular notch
- c. costal cartilage
- d. false ribs
- e. floating ribs
- f. jugular notch
- g. manubrium
- h. sternal angle
- i. sternum
- j. true ribs
- k. xiphisternal joint
- l. xiphoid process