

Name \_\_\_\_\_

### Variation in the Axial Skeleton

#### Take-home portion of Human Anatomy Lab Exam 1

Complete this exercise by visiting the on-line text *Illustrated Encyclopedia of Human Anatomic Variation* at <http://www.anatomyatlases.org/AnatomicVariants/AnatomyHP.shtml>, then scroll down to the “Skeletal System Listed by Region”.

Cranium (Note Figures available at bottom.)

\_\_\_\_\_ 1. What percentage of individuals have sutural bones at the lambdoid suture?

Frontal bone

\_\_\_\_\_ 2. What is the frequency of persistence of a complete metopic suture into adulthood in American Caucasians?

\_\_\_\_\_ 3. What is the frequency of persistence of the metopic suture in American Blacks?

Maxilla (Note graphic illustrating variation in sinuses.)

\_\_\_\_\_ 4. According to Kadanoff et. al., how frequently is the infraorbital foramen doubled?  
(Note associated graphic in Cranium section.)

Mandible ( True or False)

\_\_\_ 5. Unerupted teeth have been found in both the mandibular ramus and coronoid process.

\_\_\_ 6. The mental foramen is usually positioned inferior to the 1<sup>st</sup> molar tooth.

Numerical Variation in Vertebral Column

\_\_\_\_\_ 7. According to these authors, what percentage of individuals have a “normal”  
(7-12-5-5-4) vertebral distribution?

\_\_\_\_\_ 8. Which region exhibits the least variation?

\_\_\_\_\_ 9. Which region exhibits the greatest variation?

\_\_\_\_\_ 10. What percentage of whites had an increase to 6 sacral vertebrae due to fusion of the  
1<sup>st</sup> coccygeal?

Sacrum & coccyx

\_\_\_\_\_ 11. Note the occasional persistence of a tail, a reflection of our vertebrate ancestry. What  
is the longest reported occurrence of a tail in humans?

### Cervical vertebrae

- \_\_\_\_\_ 12. Your text author (Saladin) says that C<sub>2</sub>-C<sub>6</sub> are typically bifid. Do these authors agree?
- \_\_\_\_\_ 13. On which vertebrae have cervical ribs been observed?
- \_\_\_\_\_ 14. The 7<sup>th</sup> cervical vertebra is often termed the “vertebra prominens” because it forms the palpable prominence at the dorsum of the neck. How frequently is it really the most prominent?

### Thorax - Sternum

- \_\_\_\_\_ 15. Gideon Oliver, famed fictional forensic anthropologist, is examining a sternum unearthed at a crime scene and makes the following measurements: body: 9.9 cm, manubrium 4.1 cm. Does he conclude that the skeleton is male or female?

Visit <http://www.ajronline.org/cgi/content/full/186/4/956> to see current research on anatomic variation. Be sure to scroll down and view the CT images. According to these authors:

- \_\_\_\_\_ 16. How frequently was a foramen/formina observed in the xiphoid process?
- \_\_\_\_\_ 17. How often were suprasternal bones/tubercles found?