1. Define Forensic Anthropology - The study of skeletonized human remains.

2. List 4 ways Forensic Anthropology can be used to possibly identify remains - Age, Sex, Race, & Height

3. What questions should a Forensic Anthropologist attempt to answer when bones are found? Are they human bones? How long have the bones been there? Who is this? What is the cause of death? Are they bones or some other type of material? Is there only one individual present, or more than one?

4. What should be examined to determine the age of the remains? Degree of closure or fusion in cranial sutures, number of permanent and/or baby teeth present, and stages of growth plates on long bones.

**Lamboidal suture** closed by 30 years (starts closing around 21 yrs.)

**Sagittal suture** closed by 35 yrs.

**Coronal suture** closed by 50 yrs.

**Last bone to fuse/close – clavicle between 23-28 years**

**Last permanent teeth to come in – wisdom (3rd molars) between 17-21**
5. Describe the difference between a female and a male pelvis -
**Male:** Narrow pelvic opening; long, narrow sacrum, acute (less than 90deg) subpubic angle
**Female:** Larger, circular pelvic opening; wide sacrum, wide (approx. 90deg) subpubic angle

![Diagram of Pelvis Comparison]

6. Describe the difference between a female and a male skull –
**Male:** Overall larger skull; pronounced brow bone;
***mastoid process larger; sloping forehead; square chin; developed ridge at back of skull
**Female:** Smaller skull; diminished brow bone;
***mastoid process smaller; more vertical forehead; pointed chin; small ridge at back of skull

![Diagram of Skull Comparison]
7. List the three common types of race determinations used by Forensic Anthropologists - African (Negroid); European (Caucasoid); Asian or Native Descent (Mongoloid)
8. Describe identifying characteristics of the Mongoloid skull – Flat vertical frontal plane (forehead), small round nasal cavity, and circular eye orbits
9. Describe identifying characteristics of the Negroid skull – Cranium projected outward, wide nasal cavity, and square eye orbits
10. Describe identifying characteristics of the Caucasoid skull – Flat cranium; long, narrow nasal cavity; and oval eye orbits

11. How can one determine the height of an individual based on their remains?
Using the measurement of the length of a long bone (femur, humerus, radius, & tibia) and placing it in a known equation specific for race, bone, and gender.

12. List three additional ways to identify skeletal remains -
   1. Facial reconstruction using the skull;
   2. Observation of bones showing healing and/or scarring due to past injury;
   3. Observation of bones indicating trauma such as cracks and holes

13. List the seven steps regarding the proper excavation of skeletal remains –
   1. Remove litter and vegetation if present.
   2. Stake out and map the exact area for excavation.
   3. Determine the grave outline and remove the soil covering by sifting each layer to check for evidence or small bones.
   5. Continually document with photography, maps, inventory, and measurements.
   6. Once all remains have been exposed, document again.
   7. Remove each bone separately at one time and bag individually.

14. Define Forensic Odontology - The study of teeth and bite marks for purposes of identifying skeletal remains.
15. List five ways teeth can be used for body identification -
   1. In children, age can be estimated by observing the location and number of baby teeth; In older adults, age can be estimated by observing the wear patterns on teeth.
   2. Can be compared to dental records of possible missing persons.
   3. May contain DNA.
   4. Teeth are harder to destroy in a fire than are bones.
   5. Can be used in bite mark identification.
16. If death has occurred, list the three things that must be determined and will be listed on the coroner’s official report - **Cause, Manner, & Mechanism of death**

17. Define Mechanism and give 3 examples - The immediate “physiological” derangement resulting in death (the physiological process that causes one or more vital organs to fail – the process of dying). Examples – hemorrhage (large amount of blood loss); cardiac arrhythmia (irregular heartbeat); cardiac arrest (heart stops beating-heart attack)

18. Define Manner and give the 5 choices available to the coroner - The “reason” the cause of death occurred. Choices – Homicide, Suicide, Natural, Undetermined, and Accidental

19. Define Cause and give three examples - The disease or injury responsible for “initiating” the sequence of events that sets the mechanism in place to result in death. Examples – gunshot wound; drug overdose; cardiovascular disease (hardening of the arteries)

20. A 65 year old male has been killed by a home intruder. The coroner's report cites he has a gunshot wound to the chest and hemorrhaged to death (lost a large amount of blood). What is the manner (one of the 5 choices) - **Homicide**
What is the cause (initiator) – **gunshot wound**
What is the mechanism (what did the initiator do physically to the body to make it die) – **hemorrhaged to death**

21. List in order the five stages of decomposition -
   1. Fresh
   2. Bloat
   3. Active Decay
   4. Advanced Decay
   5. Dry Remains

22. Name that stage:
   a. All that remains are dry skin, cartilage, and bones either partially or fully skeletonized – **Dry Remains**
   b. Immediately after death blood is not pumping; blood pools in lower parts creating livor mortis, followed by rigor mortis (stiffening of muscles) – **Fresh**
   c. Little insect activity and bones are revealed – **Advanced Decay**
   d. Anaerobic metabolism causes gases to build up, making body swell; fluids leak from orifices – **Bloat**
   e. Greatest body mass loss; tissue is liquefied; strong odors; large amount of maggot mass pupates – **Active Decay**

23. Define Forensic Entomology - The study of insects and their life cycles to determine how long a body has been deceased.

24. How quickly after death do insects come to feed on dead tissue? **Within 24 hours**

25. Which fly species is the most commonly found insect on dead bodies? **Blow Fly**

26. List four things that can speed up or slow down the insect lifecycle development -
   1. climate *** higher temp, speeds up lifecycle
   2. weather ***wetter, speeds up lifecycle
   3. geographical location ***different species in different locations
   4. drugs and/or toxins present in the body *** insects consume drug/toxin as eating tissue; cocaine (stimulant=speeds up cycle); depressant=slow s down cycle
27. Name the bones -

- Phylanges (2) – 18 & 22
- Femur - 6
- Tibia - 19
- Fibula - 20
- Humerus - 3
- Radius - 14
- Ulna - 15
- Carpals - 16
- Metacarpals - 17
- Tarsals - 21
- Metatarsals - 8
- Patella - 7
- Cranium - 9
- Pelvis - 23
- Scapula - 2
- Clavicle - 1
- Sternum - 12
- Vertebrae - 4
- Ilium – 5c
- Ilium – 5a
- Sacrum – 5b
- Mandible - 11
- Zygomatic - 10
- Ribs - 13