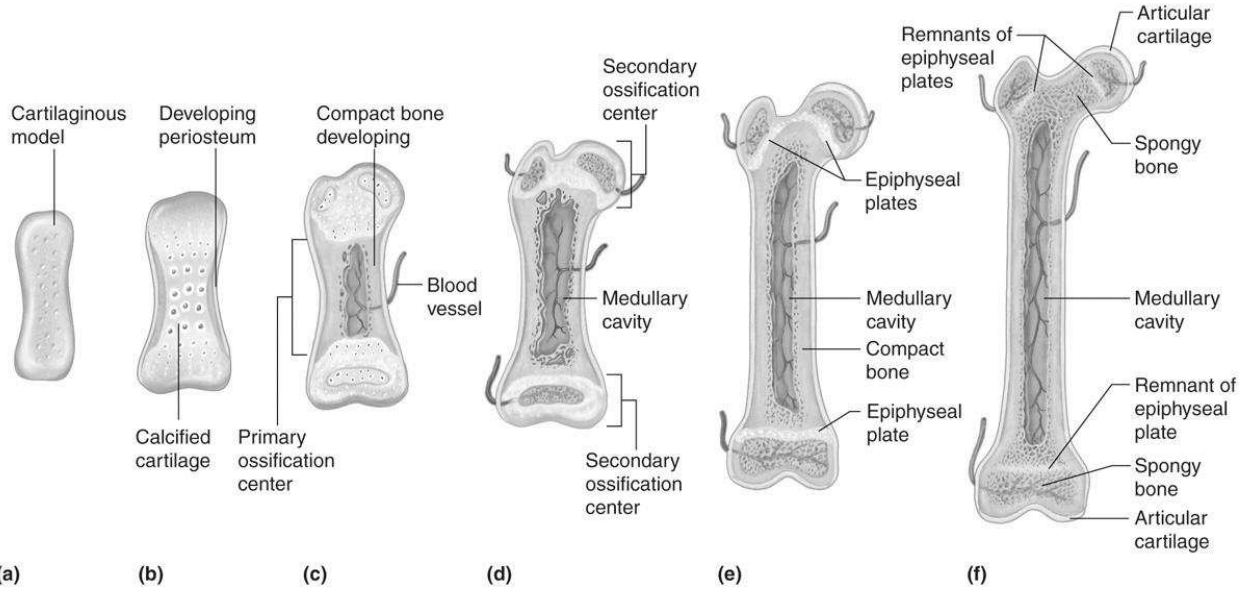
Name _____
Date Due _____

Formation, Growth and Repair of Bone Homework

Learning Target: Explain how bones grow, develop and undergo repair. (reasoning)

_____ 1. Which of the following is **not** true about embryonic bone?
- a. the femur of an embryo would be initially formed from cartilage.
- b. the bones of the skull are initially formed of unspecialized connective tissue
- c. osteoblasts are important in bone tissue formation
- d. bone formation is complete at the time of delivery

Below is a picture of developing bone. Place the letter of the picture next to its matching description. For your information, letters a-d occur in the fetus, e is a growing child and f is an adult.



_____ 2. A secondary ossification site of spongy bone appears in the epiphysis

_____ 3. Endochondral bone forms in the fetus from masses of hyaline cartilage

_____ 4. Once the ossification centers of the diaphysis and epiphyses meet, the plates ossify and no more lengthening occurs.

_____ 5. Blood vessels and osteoblasts invade the diaphysis. The region where compact bone is developing is called the primary ossification site.

_____ 6. A band of cartilage called the epiphyseal plate remains between the two ossification centers and remains active until the end of puberty.

_____ 7. Changes begin in the diaphysis where the cartilage breaks down and disappears. The periosteum forms.

What type of bone cell would be the *most* active in each situation?

8-9. A doctor tells a patient they have a disease called osteoporosis in which the solid minerals that make up the bone are being broken down faster than they are being replaced. _____
Explain your answer. _____
_____

10-11. A rapidly growing teenager. _____ Explain your answer.
_____
_____

12-13. If you fracture your bone, which type of bone cell will be responsible for replacing your bone tissue? _____ Which type of bone cell will "clean up" debris and extra bone created in the repair process? _____

Refer to your notes. Name the type of fracture that would most likely occur in each of the following situations.

14. A femur crushed in an earthquake. _____
15. A football player has his leg twisted when one defensive player holds his leg in place while another defensive player slams into his hip. _____
16. Any fracture that protrudes through the skin _____