30. For each of the following statements about bone breakage and the repair process that is true, insert T in the answer blank. For false statements, correct the underlined terms by inserting the correct term in the answer blank.

_______________ 1. A hematoma usually forms at a fracture site.
_______________ 2. Deprived of nutrition, osteocytes at the fracture site die.
_______________ 3. Non-bony debris at the fracture site is removed by osteoclasts.
_______________ 4. Growth of a new capillary supply into the region produces granulation tissue.
_______________ 5. Osteoblasts from the medullary cavity migrate to the fracture site.
_______________ 6. The fibrocartilage callus is the first repair mass to splint the broken bone.
_______________ 7. The bony callus is initially composed of compact bone.

JOINTS

31. Figure 5–15 shows the structure of a typical diarthrotic joint. Select different colors to identify each of the following areas and use them to color the coding circles and the corresponding structures on the figure. Then, complete the statements below the figure.

- Articular cartilage of bone ends
- Fibrous capsule
- Synovial membrane
- Joint cavity

1. __________________ The lubricant that minimizes friction and abrasion of joint surfaces is (1).

2. __________________ The resilient substance that keeps bone ends from crushing when compressed is (2).

3. __________________ (3) which reinforce the fibrous capsule help to prevent dislocation of the joint.
32. For each joint described below, select an answer from Key A. Then, if the Key A selection is other than C (a synovial joint), see if you can classify the joint further by making a choice from Key B.

**Key Choices**

<table>
<thead>
<tr>
<th>Key A</th>
<th>Key B</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Cartilaginous</td>
<td>1. Epiphyseal disk</td>
</tr>
<tr>
<td>B. Fibrous</td>
<td>2. Suture</td>
</tr>
<tr>
<td>C. Synovial</td>
<td>3. Symphysis</td>
</tr>
</tbody>
</table>

- 1. Has amphiarthrotic and synarthrotic examples
- 2. All have a fibrous capsule lined with synovial membrane surrounding a joint cavity
- 3. Bone regions united by fibrous connective tissue
- 4. Joints between skull bones
- 5. Joint between atlas and axis
- 6. Hip, elbow, and knee
- 7. All examples are diarthroses
- 8. Pubic symphysis
- 9. All are reinforced by ligaments
- 10. Joint providing the most protection to underlying structures
- 11. Often contains a fluid-filled cushion
- 12. Child’s long-bone growth plate made of hyaline cartilage
- 13. Most joints of the limbs
- 14. Often associated with bursae
- 15. Have the greatest mobility

33. Which structural joint type is *not* commonly found in the axial skeleton and why not?

- 
Homeostatic Imbalances of Bones and Joints

34. For each of the following statements that is true, enter T in the answer blank. For each false statement, correct the underlined words by writing the correct words in the answer blank.

_______________________ 1. In a sprain, the ligaments reinforcing a joint are excessively stretched or torn.

_______________________ 2. Age-related erosion of articular cartilages and formation of painful bony spurs are characteristic of gouty arthritis.

_______________________ 3. Chronic arthritis usually results from bacterial invasion.

_______________________ 4. Healing of a partially torn ligament is slow because its hundreds of fibrous strands are poorly aligned.

_______________________ 5. Rheumatoid arthritis is an autoimmune disease.

_______________________ 6. High levels of uric acid in the blood may lead to rheumatoid arthritis.

_______________________ 7. A “soft” bone condition in children, usually due to a lack of calcium or vitamin D in the diet, is called osteomyelitis.

_______________________ 8. Atrophy and thinning of bone owing to hormonal changes or inactivity (generally in the elderly) is called osteoporosis.

DEVELOPMENTAL ASPECTS OF THE SKELETON

35. Using the key choices, identify the body systems that relate to bone tissue viability. Enter the appropriate key terms or letters in the answer blanks.

Key Choices

A. Endocrine  C. Muscular  E. Reproductive
B. Integumentary  D. Nervous  F. Urinary

_______________________ 1. Conveys the sense of pain in bone and joints

_______________________ 2. Activates vitamin D for proper calcium usage

_______________________ 3. Regulates uptake and release of calcium by bones

_______________________ 4. Increases bone strength and viability by pulling action

_______________________ 5. Influences skeleton proportions and adolescent growth of long bones

_______________________ 6. Provides vitamin D for proper calcium absorption