Saladin 7E
Answer Key
Chapter 8, The Skeletal System

Testing Your Comprehension

1. The condyloid process of her mandible was driven into the mandibular fossa and fractured her temporal bone, creating an opening from the auditory canal to the throat.
2. High-heeled shoes raise the human foot into a position comparable to that of a cat or dog, with the body weight being supported on the heads of the metatarsal bones. In a human, however, much of the weight is still supported through the calcaneus and the heel of the shoe.
3. An intervertebral disc between C1 and C2 would restrict the mobility of those vertebrae and make it impossible to rotate the head from side to side. Furthermore, C1 has no vertebral body, therefore has no place to which an intervertebral disc could be attached.
4. In children and adolescents, the femoral head is attached to the neck by a cartilaginous epiphyseal plate; this joint has not ossified yet. Cartilage is not as strong as bone, and trauma to the femur can cause the head and neck to separate along this line. Such a fracture in any long bone is called an *epiphyseal fracture*. Adolescents are especially at risk of epiphyseal fractures because their greater body weight (compared to younger children) puts more stress on the femur and their participation in sports and rough play, and their relatively high frequency of vehicular accidents, subject them to more trauma.
5. Andy could have fractured the tibiae or the femoral shafts, but since the EMT said he had broken his hips, the most likely site would be the necks of the femurs. (A fractured acetabulum is also possible.) Andy was able to jump from such heights as a child without injury because a child's bones are more resilient and because a child, being lighter in weight, hits the ground with less momentum (force) than an adult, so the landing produces less stress on the bones.