

Saladin 7E
Answer Key
Chapter 1, Major Themes of Anatomy and Physiology

Testing Your Comprehension

1. Janet's concern is unwarranted, because a sonogram is made only with reflected sound waves, not known to cause any harm to a fetus. No X-rays are involved in sonography.
2. If the terms defining life are defined somewhat broadly, an automobile could be described as exhibiting organization (though it does not expend energy to maintain this order), a degree of chemical (if not biochemical) unity with other automobiles, metabolism (combustion of fuel), responsiveness (to the ignition switch, accelerator, etc.), and a degree of homeostasis (in thermostatically controlled systems). This shows that life is not defined by any single criterion but by a unique combination of properties. It shares many of the individual properties with nonliving things, but does not share all of them with any nonliving thing.
3. Such congenital heart defects illustrate the complementarity of form and function, because they show that even slight-seeming structural abnormalities can cause serious, even life-threatening dysfunctions.
4. If not for the arboreal selection pressures faced by the forerunners of humans, humans today, if they existed at all, might not exhibit such a mobile shoulder joint, opposable thumb, prehensile hand, color and stereoscopic vision, or large brain.
5. This is an example of negative feedback. Thirst is a response to dehydration. It motivates a person or animal to seek and consume water, thus rehydrating the body and restoring water balance. This is an example of homeostasis, serving to maintain body fluids at a level close to a set point.

Atlas A, General Orientation to Human Anatomy

Testing Your Comprehension

1. (a) Transverse, (b) sagittal, (c) frontal, (d) sagittal, (e) frontal, (f) transverse.
2. It is a misunderstanding of the word *plantar*, the surface where such warts commonly occur.
3. Medial—sternum or spine; lateral—shoulders or arms; superior—clavicles or head; inferior—abdomen or intestines; deep—heart or lungs; superficial—skin or pectoralis major; posterior—scapula or trapezius; anterior—sternum or breast. (Answers will vary; these are examples.)
4. (a) Pancreas or left kidney, (b) cecum or appendix, (c) urinary bladder or uterus, (d) part of liver, (e) lung. (Answers will vary; these are examples.)
5. Hypochondriac people may complain of “funny pains,” putting their hand to the hypochondriac region.