

## Section 12.1: Review Answers

### Student Textbook page 409

- (a)** Thermoreceptors in the skin are stimulated by radiant energy.

**(b)** Photoreceptors are stimulated by visible light energy.
- Mechanoreceptors (touch, pressure, pain, balance, and body position) would be stimulated by a person performing a complicated yoga pose.
- Each person's unique perception results from the interpretation of the meaning of sensory information by the cerebral cortex. Perception is the active process of selecting, organizing, and interpreting the information brought to the brain by the senses. The brain of each individual organizes and translates this information differently.
- Your perception of the way your boots feel changes because of sensory adaptation. Adaptation occurs in most sense receptors. It is useful because it prevents the nervous system from being bombarded with information about insignificant matters like the touch and pressure of your clothing. (Note: For more advanced students, you could explain that pressure receptors located in the skin are each connected to a sensory neuron. When pressure is first applied to the receptor, a volley of impulses is initiated in the sensory neuron. However, with continuous pressure, the frequency of action potentials decreases quickly and soon stops. This is the process known as sensory adaptation.)
- When viewing a complicated scene such as an "optical illusion," the brain *parallels* or splits up this input to various areas of the brain—a form of neural multi-tasking. Sometimes the input information does not get reintegrated precisely, and what we sense is not necessarily what we perceive.