

Name: _____ Class: _____ Date: _____

Chapter 3 - Sensation and Perception

1. The perceptual constancies trick the eye through visual illusions.

- a. True
- b. False

ANSWER: True

2. Glen is an accomplished guitarist. He can play the guitar with his eyes closed. When he does this, he is quite aware of which frets his fingers are on. He does this with the aid of his vestibular sense.

- a. True
- b. False

ANSWER: False

3. Genetic components do not contribute to an individual's sensitivity to basic tastes.

- a. True
- b. False

ANSWER: False

4. The Hering–Helmholtz illusion is a visual illusion.

- a. True
- b. False

ANSWER: True

5. Sensory receptors embedded in the skin fire when the surface of the skin is touched.

- a. True
- b. False

ANSWER: True

6. Active touching means continuously moving your hand along the surface of an object so that you continue to receive sensory input from the object.

- a. True
- b. False

ANSWER: True

7. Humans can detect the odor of 1 one-millionth of a milligram of vanilla in a liter of air.

- a. True
- b. False

ANSWER: True

8. Psychophysicist Ernst Weber discovered that the threshold for perceiving differences in the intensity of light is about 10 percent of their intensity.

- a. True
- b. False

ANSWER: False

9. The rods and cones in the eye respond to light with chemical changes that create neural impulses that are picked up by the unipolar cells.

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- a. True
- b. False

ANSWER: False

10. According to the law of similarity, we perceive different objects as belonging together.

- a. True
- b. False

ANSWER: False

11. Odors trigger firing of receptor neurons in the olfactory membrane high in each nostril.

- a. True
- b. False

ANSWER: True

12. The iris is the muscle in the eye that controls the amount of light that passes through the cornea.

- a. True
- b. False

ANSWER: True

13. Convergence causes feelings of tension in the eye muscles and provides a binocular cue for depth.

- a. True
- b. False

ANSWER: True

14. Researchers historically agreed on four primary taste qualities: sweet, sour, salty, and bitter.

- a. True
- b. False

ANSWER: True

15. Frequency and amplitude are dependent on each other.

- a. True
- b. False

ANSWER: False

16. Cochlear implants contain microphones that sense sounds and electronic equipment that transmits sounds past damaged hair cells to stimulate the auditory nerve.

- a. True
- b. False

ANSWER: True

17. The term parapsychological phenomena refers to the perception of objects or events through sensory organs.

- a. True
- b. False

ANSWER: False

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18. When the eyeball is too short, the images of nearby objects are focused in front of the retina, causing farsightedness.
- a. True
 - b. False

ANSWER: False

19. The organ of Corti is a membrane that lies coiled within the cochlea.
- a. True
 - b. False

ANSWER: False

20. Top-down processing involves the organization of the parts of a pattern to recognize, or form an image of, the pattern they compose.
- a. True
 - b. False

ANSWER: False

21. On a bright, sunny day, Manny leaves a dimly-lit movie theater and goes out into the street. The _____ in his eyes adjust to the sudden increase in light.

- a. ganglion cells
- b. fovea
- c. pupils
- d. optic nerves

ANSWER: c

22. Which of the following is true of Weber's constant?

- a. Weber's constant for pitch is 1/444.
- b. Weber discovered that the threshold for perceiving differences in the intensity of light is about 8 percent.
- c. Weber's constant is not valid for noticing differences in lifted weight.
- d. Weber's constant for light is inaccurate when extremely bright or dull lights are compared.

ANSWER: d

23. _____ is the type of sensory adaptation in which we become less sensitive to constant stimuli.

- a. Negative adaptation
- b. Light adaptation
- c. Dark adaptation
- d. Positive adaptation

ANSWER: a

24. In the context of pain, which of the following statements is true?

- a. Pain is usually sharpest where nerve endings are densely packed.
- b. Headaches originate through nerve endings present in the brain.
- c. Pain does not reverberate throughout the nervous system.
- d. Modern research shows that acupuncture works by balancing the body's flow of energy.

ANSWER: a

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25. Which of the following is the function of the iris?
- a. Regulating the amount of light that enters the eye
 - b. Conducting sensory input to the brain
 - c. Transmitting perception of color to the brain
 - d. Distinguishing between warm and cool colors

ANSWER: a

26. The loudness of a sound is expressed in _____.
- a. hertz (Hz)
 - b. decibels (dB)
 - c. watts (W)
 - d. volt (V)

ANSWER: b

27. In the context of color blindness, which of the following statements is true?
- a. Dichromats are sensitive to black–white and either red–green or blue–yellow colors.
 - b. Monochromats have normal color vision.
 - c. Dichromats are sensitive to red–green, blue–yellow, and light–dark colors.
 - d. Trichromats are partially colorblind.

ANSWER: a

28. _____ is a monocular cue for depth based on the coming together of parallel lines as they recede into the distance.
- a. Motion parallax
 - b. Texture gradient
 - c. Perspective
 - d. Constancy

ANSWER: c

29. Which of the following best describes psychokinesis?
- a. It refers to the perception of objects that do not stimulate the known sensory organs.
 - b. It refers to the direct transmission of thoughts or ideas from one person to another.
 - c. It refers to the ability to mentally manipulate or move objects.
 - d. It refers to the transfer of information through an irregular or unusual process.

ANSWER: c

30. Which of the following statements is true of the absolute threshold?
- a. It is determined by exposing individuals to progressively stronger stimuli until the minimum stimuli the person can detect is found.
 - b. It is used to represent the minimum difference in the magnitude of two stimuli required to tell them apart.
 - c. It is used to measure the intensity of sensory input by using the sensory adaptation process.
 - d. It is determined by measuring the rate at which a person becomes less sensitive to stimuli of low magnitude and more sensitive to stimuli that remain the same.

ANSWER: a

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31. _____ is best described as the stimulation of sensory receptors and the transmission of sensory information to the central nervous system.
- a. Desensitization
 - b. Reinforcement
 - c. Sensation
 - d. Sensory cessation

ANSWER: c

32. The _____ conducts sensory input to the brain, where it is relayed to the visual area of the occipital lobe.
- a. optic nerve
 - b. cornea
 - c. lens
 - d. sclera

ANSWER: a

33. Which of the following statements is true of depth perception?
- a. The clearness of an object cannot suggest its distance.
 - b. Shadows and highlights give information about an object's two-dimensional shape.
 - c. Closer objects are perceived as having smoother textures than distant objects.
 - d. Distant objects stimulate smaller areas on the retina than nearby ones.

ANSWER: d

34. According to the law of _____, there is a tendency to perceive a series of points or lines as having unity.
- a. continuity
 - b. proximity
 - c. common fate
 - d. similarity

ANSWER: a

35. _____ is the tendency to perceive an object as being just as luminous even though lighting conditions change its intensity.
- a. Shape constancy
 - b. Brightness constancy
 - c. Color constancy
 - d. Size constancy

ANSWER: b

36. Which of the following statements is true of the signal–detection theory?
- a. The signal received from an unidentified source cannot be perceived without having prior knowledge about the source.
 - b. A stimulus appears to be in constant flux due to the inability of human senses to perceive the full spectrum of any sensory input.
 - c. The relationship between a physical stimulus and a sensory response is fully mechanical.
 - d. The intensity of a signal is one factor that determines whether people will perceive sensory stimuli or a difference between signals.

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ANSWER: d

37. _____ refers to the tendency to perceive a broken figure as being complete or whole.
- a. The principle of closure
 - b. The law of common fate
 - c. The principle of perceptual organization
 - d. The law of continuity

ANSWER: a

38. Which of the following is true of feature detectors?
- a. They are external stimuli that have a high pitch.
 - b. They refer to neurons that fire in response to specific features of sensory stimuli.
 - c. They refer to visible light that triggers visual sensations.
 - d. They refer to hormones that are triggered in response to visual stimuli.

ANSWER: b

39. The process of adjusting to conditions of lower lighting by increasing the sensitivity of rods and cones is known as _____.
- a. negative adaptation
 - b. dark adaptation
 - c. desensitization
 - d. saturation

ANSWER: b

40. _____ is the sense of equilibrium that informs us about our bodies' positions relative to gravity.
- a. Extrasensory perception
 - b. The vestibular sense
 - c. The olfactory sense
 - d. Kinesthesia

ANSWER: b

41. In the context of sound, which of the following is true?
- a. The pitch of a sound roughly corresponds to the height, or amplitude, of sound waves.
 - b. The greater the number of cycles per second (Hz), the higher the pitch of the sound.
 - c. The frequency and amplitude of a sound are dependent on each other.
 - d. The pitch of a sound is expressed in decibels (dB).

ANSWER: b

42. _____ is the tendency to perceive an object as being the same hue even though lighting conditions change its appearance.
- a. Size consistency
 - b. Color consistency
 - c. Shape consistency
 - d. Brightness consistency

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ANSWER: b

43. Stimuli suggestive of depth that involve simultaneous perception by both eyes are known as _____.
- a. monocular cues
 - b. positive cues
 - c. binocular cues
 - d. negative cues

ANSWER: c

44. The colors across from one another on the color wheel are labeled _____.
- a. complementary colors
 - b. supplementary colors
 - c. auxiliary colors
 - d. secondary colors

ANSWER: a

45. Exposure to very loud sounds can lead to damage of the auditory nerve or hair cells, resulting in _____.
- a. conductive deafness
 - b. sensorineural deafness
 - c. tympanosclerosis
 - d. perichondritis

ANSWER: b

46. The frequency theory notes that for us to perceive lower pitches, _____.
- a. we need to match the frequency of the sound waves with our neural impulses
 - b. the frequency of our neural impulses should exceed that of the sound waves
 - c. we need to match the wavelength of the sound waves with our neural impulses
 - d. the frequency of our neural impulses should be lower than that of the sound waves

ANSWER: a

47. In _____, people tend to be more responsive to some pitches than others.
- a. conductive deafness
 - b. sensorineural deafness
 - c. selective deafness
 - d. mixed deafness

ANSWER: b

48. While looking at a painting in an art gallery, many of Jinan's brain cells fire in response to lines presented at various angles, while others fire in response to specific colors. These brain cells are termed _____.
- a. pitch detectors
 - b. feature detectors
 - c. sensory adaptors
 - d. olfactory nerves

ANSWER: b

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49. Which of the following theories proposed that there are three types of color receptors, but they are not sensitive only to red, green, and blue?

- a. The opponent–process theory
- b. The signal–detection theory
- c. The trichromatic theory
- d. The place theory

ANSWER: a

50. Within the eye, visual acuity is greatest at the_____.

- a. iris
- b. lens
- c. fovea
- d. blind spot

ANSWER: c

51. Which of the following statements is true of hue?

- a. It can be used to treat color blindness.
- b. It is present above the visible spectrum of light.
- c. It is invariably the same as the saturation level of color.
- d. It is determined by the wavelength of visible light.

ANSWER: d

52. The cones are most densely packed in a small spot at the center of the retina called the_____.

- a. cornea
- b. iris
- c. sclera
- d. fovea

ANSWER: d

53. The_____adjusts or accommodates to an image by changing its thickness.

- a. cornea
- b. pupil
- c. iris
- d. lens

ANSWER: d

54. _____ is the fraction of the intensity by which a source of physical energy must be increased or decreased so that a difference in intensity will be perceived.

- a. Subliminal stimulation
- b. The absolute threshold
- c. Weber's constant
- d. Newton's constant

ANSWER: c

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55. Which of the following monocular cues is based on the perception that closer objects appear to have rougher surfaces?
- a. Clearness
 - b. Proximity
 - c. Motion parallax
 - d. Texture gradient

ANSWER: d

56. The pain message is relayed from the spinal cord to the _____ and then projected to the cerebral cortex, making us aware of the location and intensity of the damage.

- a. cerebrum
- b. medulla
- c. ganglions
- d. thalamus

ANSWER: d

57. Lisa is a fabric specialist. Recently, she was invited to an exhibition of Persian silks. Being an expert on fabrics, Lisa continuously moved her hand along the surfaces of different pieces of fabric to get the feel of them. This action is referred to as _____.

- a. subliminal stimulation
- b. active touching
- c. light adaptation
- d. sensory adaptation

ANSWER: b

58. _____ is the view that the perception of sensory stimuli involves the interaction of physical, biological, and psychological factors.

- a. Opponent–process theory
- b. Trichromatic theory
- c. Signal–detection theory
- d. Frequency theory

ANSWER: c

59. Jeff observed a quick succession of cars moving together on the road. His first thought was that they were all a part of a convoy of some sort. Which law of perceptual organization best explains Jeff's assumption?

- a. The law of unity
- b. The law of similarity
- c. The law of continuity
- d. The law of common fate

ANSWER: d

60. We learn to perceive objects that appear to move with us as being at greater distances due to the phenomenon of _____.

- a. motion parallax
- b. reverse motion
- c. size constancy

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d. shape constancy

ANSWER: a

61. _____ is the process by which we organize or make sense of the sensory impressions caused by the light that strikes our eyes.

- a. Visual perception
- b. Subliminal stimulation
- c. Subliminal perception
- d. Auditory stimulation

ANSWER: a

62. The _____ is a thin membrane inside the ear that vibrates in response to sound waves.

- a. auditory nerve
- b. eardrum
- c. cochlea
- d. organ of Corti

ANSWER: b

63. Nearsightedness can result when the eyeball is elongated such that the images of:

- a. nearby objects are focused behind the retina.
- b. distant objects are focused in front of the retina.
- c. nearby objects are magnified to twice their original size.
- d. distant objects are shrunk to less than their original size.

ANSWER: b

64. According to the law of _____, there is a perceptual tendency to group together objects that are near one another.

- a. similarity
- b. proximity
- c. common fate
- d. continuity

ANSWER: b

65. Which of the following senses is dominant in human beings?

- a. Hearing
- b. Smell
- c. Vision
- d. Touch

ANSWER: c

66. Amy and George were practicing a song for a cultural program. Their music teacher insisted that Amy sing the verses in a high pitch. Which of the following could be a reason for the music teacher's decision to select Amy for the high pitch sounds and not George?

- a. A woman's vocal cords are usually shorter and vibrate at a greater frequency.
- b. The pitch of a man's voice is usually too high to resonate.

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- c. A man's vocal cords are shorter and therefore vibrate at a lower frequency.
- d. The pitch of women's voices is usually lower than that of men's voices.

ANSWER: a

67. Which of the following is a function of the middle ear?
- a. To stimulate the basilar membrane
 - b. To decrease the pressure of the air that is expelled from the body
 - c. To funnel sound waves to the eardrum
 - d. To increase the pressure of the air entering the ear

ANSWER: d

68. Which of the following fractions is known as Weber's constant for light?
- a. 1/60th
 - b. 1/53rd
 - c. 1/333rd
 - d. 1/10th

ANSWER: a

69. Pain results when neurons called _____ in the skin are stimulated.
- a. cerebellum stellate cells
 - b. ganglions
 - c. nociceptors
 - d. unipolar neurons

ANSWER: c

70. _____ usually stems from damage to the structures of the inner ear, most often the loss of hair cells. People with this condition tend to be more sensitive to some pitches than others.
- a. Sensorineural deafness
 - b. Selective hearing
 - c. Conductive deafness
 - d. Discriminatory perception

ANSWER: a

71. _____ refers to the perception of objects that do not stimulate the known sensory organs.
- a. The vestibular sense
 - b. Clairvoyance
 - c. The kinesthetic sense
 - d. Psychokinesis

ANSWER: b

72. In the context of perceptual organization, which of the following statements is true?
- a. According to the law of continuity, elements seen moving together are perceived as belonging together.
 - b. According to the law of proximity, we perceive similar objects as belonging together.
 - c. Bottom-up processing is the use of contextual information or knowledge of a pattern to organize parts of the

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pattern at a given point in time.

- d. When figure–ground relationships are ambiguous, or capable of being interpreted in various ways, our perceptions tend to be unstable and shift back and forth.

ANSWER: d

73. In the context of the eye, changes in thickness of the lens permit:

- a. a clear image of an object to be projected onto the retina.
- b. the pupil to automatically adjust to the amount of light present.
- c. the fovea to stimulate the blind spot to negate visual stimulation.
- d. an object to intensify the wavelength of its hue for better perception.

ANSWER: a

74. In which of the following conditions do receptors for warmth fire?

- a. When skin temperature increases
- b. When body temperature decreases
- c. When nociceptors in the skin are depressed
- d. When phantom limb pain is aroused

ANSWER: a

75. Visual stimuli can be flashed too briefly, below our absolute threshold for conscious perception, to enable us to process them. This is an example of_____.

- a. subliminal stimulation
- b. the difference threshold
- c. light adaptation
- d. dark adaptation

ANSWER: a

76. Amy accidentally hit her elbow against the edge of a wall. Amy's mother rushed to her and rubbed the affected elbow. Amy's pain subsided. Which theory would best explain this incident?

- a. The signal–detection theory
- b. The place theory
- c. The gate theory
- d. The opponent–process theory

ANSWER: c

77. The term_____is derived from the ancient Greek words for "motion" and "perception".

- a. kinesthesia
- b. psychokinesis
- c. clairvoyance
- d. telepathy

ANSWER: a

78. In the context of auditory perception, which of the following statements is true?

- a. The frequency theory holds that the pitch of a sound is sensed according to the place along the basilar membrane that vibrates in response to it.

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- b. The place theory notes that for us to perceive lower pitches, we need to match the frequency of the sound waves with our neural impulses.
- c. Neurons that carry auditory signals cannot fire more than 100 times per second due to the uneven lengths of the axons.
- d. The frequency theory appears to account only for pitch perception between 20 and a few hundred cycles per second.

ANSWER: d

79. The _____ states that in response to sound waves of frequencies between a few hundred and 4,000 cycles per second, groups of neurons take turns firing to transmit sensory information about pitches.

- a. frequency theory
- b. closure principle
- c. volley principle
- d. place theory

ANSWER: c

80. The perception of objects or events through means other than the recognized sensory organs is termed _____.

- a. subliminal perception
- b. psychokinesis
- c. kinesthesia
- d. extrasensory perception

ANSWER: d

81. The oval window transmits vibrations into the inner ear, the bony tube called the _____.

- a. *incus*
- b. *malleus*
- c. cochlea
- d. eardrum

ANSWER: c

82. In the context of the human eye, the size of the _____ is sensitive to an individual's emotions.

- a. retina
- b. pupil
- c. optic nerve
- d. cornea

ANSWER: b

83. The _____ considers the psychological factors that influence people and their sense of perception.

- a. trichromatic theory
- b. opponent-process theory
- c. signal-detection theory
- d. frequency theory

ANSWER: c

84. The axon bundle that transmits neural impulses from the organ of Corti to the brain is known as the _____.

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- a. cochlea
- b. basilar membrane
- c. Eustachian tube
- d. auditory nerve

ANSWER: d

85. Why do the two lines in the Müller–Lyer illusion appear to be of different lengths even though they are the same length?

- a. Due to the principles of perceptual organization
- b. Due to the principles of the perception of motion
- c. Due to the principles of color consistencies
- d. Due to the principles of depth consistencies

ANSWER: a

86. The process of becoming more sensitive to stimulation is known as _____.

- a. negative adaptation
- b. retinal disparity
- c. sensitization
- d. saturation

ANSWER: c

87. _____ tells us whether we are falling and provides cues to whether our body is changing speed.

- a. The olfactory sense
- b. Clairvoyance
- c. Telepathy
- d. The vestibular sense

ANSWER: d

88. A person with normal color vision is labeled a _____.

- a. bichromat
- b. dichromat
- c. trichromat
- d. monochromat

ANSWER: c

89. Despite being blind, Brian has never had a problem with performing day-to-day activities. He has been able to accurately judge the position and motion of his body parts, and thus, he is able to perform activities such as walking and eating quite normally. Which of the following senses is illustrated in the scenario?

- a. Psychokinesis
- b. Kinesthesia
- c. Telepathy
- d. Clairvoyance

ANSWER: b

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90. Which of the following statements is true of rod cells in the retina of the eye?

- a. They transmit sensory information from the brain to the eye.
- b. They transmit the sensation of color.
- c. They are most dense toward the periphery of the retina.
- d. They are sensitive only to the intensity of light.

ANSWER: d

91. Once light passes through the iris, it encounters the _____.

- a. pupil
- b. lens
- c. cornea
- d. sclera

ANSWER: b

92. A(n) _____ is the lingering visual impression made by a stimulus that has been removed.

- a. scotoma
- b. blind spot
- c. afterimage
- d. illusion

ANSWER: c

93. _____ is associated with extrasensory perception.

- a. Subliminal perception
- b. Psychokinesis
- c. Kinesthesia
- d. Acupuncture

ANSWER: b

94. Vibrations in the fluids within the chambers of the inner ear press against the _____.

- a. auditory nerve
- b. basilar membrane
- c. cochlea
- d. oval window

ANSWER: b

95. Which of the following is contained in the middle ear?

- a. The auditory nerve
- b. The organ of Corti
- c. The basilar membrane
- d. The eardrum

ANSWER: d

96. When Anna moved to her new apartment, she found it very difficult to sleep because of the traffic noise in the neighborhood. However, she gradually became accustomed to the sound of the vehicles as days progressed, and now the

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noise outside no longer disturbs her sleep. This scenario illustrates an instance of _____.

- a. negative adaptation
- b. light adaptation
- c. sensitization
- d. dark adaptation

ANSWER: a

97. How do pigments gain their colors?

- a. By creating a reflective surface that changes its wavelengths to match the color of the surroundings
- b. By increasing the value of the colors already present in them through amplification
- c. By producing visual impression of a stimulus that has been removed from the color spectrum
- d. By absorbing light from certain segments of the spectrum and reflecting the rest

ANSWER: d

98. Which of the following scenarios illustrates subliminal stimulation?

- a. Caleb who initially found his classroom too bright eventually became accustomed to the brightness.
- b. While driving down a highway, Deborah perceived the objects outside to be moving faster than her car.
- c. In a restaurant, several mirrors were arranged in such a way that the restaurant appeared to be large and spacious despite it being small.
- d. In an experiment, an audio track was played at such a low volume that the participants were not aware of it.

ANSWER: d

99. Andy is a professional skydiver. During his freefall, he is able to automatically sense his body's position in relation to the earth's gravity without really having to look around him. This allows him to adjust his position appropriately during his fall to regulate his momentum. The sense that is illustrated in this scenario is the _____.

- a. vestibular sense
- b. kinesthetic sense
- c. precognitive sense
- d. telepathic sense

ANSWER: a

100. Which of the following terms denotes a trick of perceptual constancies on the eye?

- a. Depth perception
- b. Retinal disparity
- c. A visual illusion
- d. An absolute threshold

ANSWER: c

101. The retina consists of cells called _____ that are sensitive to light.

- a. nephrons
- b. photoreceptors
- c. keratinocytes
- d. melanocytes

ANSWER: b

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102. As part of a study in auditory perception, students were made to listen to a low-volume music track. When they first put on their headphones, they almost couldn't hear anything. But as they became more attentive, the sound gradually became clearer. This is an example of _____.

- a. sensitization
- b. subliminal stimulation
- c. retinal disparity
- d. pitch increase

ANSWER: a

103. Which of the following is a new basic taste that was recently added to the primary taste qualities?

- a. Koshoo
- b. Sweet
- c. Bitter
- d. Umami

ANSWER: d

104. The part of the electromagnetic spectrum that stimulates the eye and produces visual sensations is known as _____.

- a. visible light
- b. cosmic rays
- c. ultraviolet rays
- d. the visual field

ANSWER: a

105. Shannon is observing a painting. She perceives one object in the painting as a two-dimensional circle and another object as a three-dimensional sphere. Which of the following monocular cues can account for this effect?

- a. Convergence
- b. Shadowing
- c. Retinal disparity
- d. Shape constancy

ANSWER: b

106. In the context of the difference threshold, identify the correct statement.

- a. Weber's constant is especially accurate when comparing extremely bright or extremely dull lights.
- b. On average, people can tell when a tone rises or falls in pitch by an extremely small one-third of 1 percent.
- c. On average, people can detect differences in saltiness of less than 10 percent.
- d. Ernst Weber discovered through laboratory research that the threshold for perceiving differences in the intensity of light is about 20 percent of their intensity.

ANSWER: b