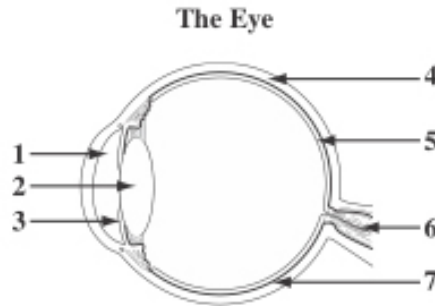


Numeric Response Practice

Collie eye anomaly (CEA) is a genetic disorder that affects a number of eye structures in dogs of various collie breeds. CEA results in thinning of the sclera, reduced development of the choroid, and detachment of the retina. The structures and functions of the parts of the eye are similar in dogs and in humans.



Numerical Response #1

In the diagram above, the three eye structures that are affected in a dog with CEA are numbered _____, _____, and _____.

(Record all **three digits** of your answer in **any order** in the numerical-response section on the answer sheet.)

Some Cell Types

- 1 Rod cells
- 2 Cone cells
- 3 Cochlea hair cells
- 4 Taste receptor cells
- 5 Semi-circular canal hair cells

Some Disorders

Colour-blindness—a genetic disorder that results in the inability to detect certain colours of light

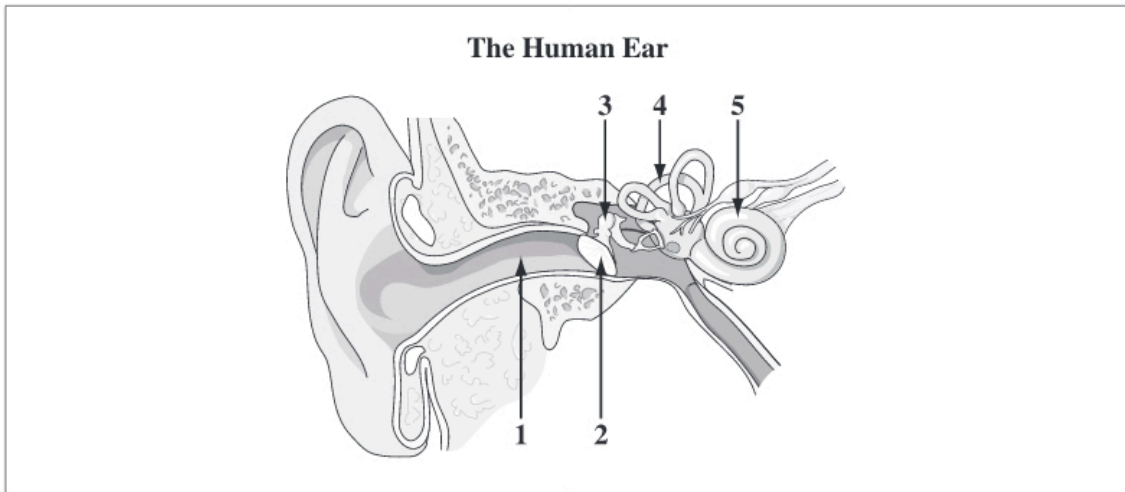
Neural deafness—the inability to detect sound as a result of damage to sensory structures in the inner ear

Permanent vertigo—a severe balance disorder that usually results from physical trauma to the ear

Numerical Response #2

Match three of the cell types numbered above with the disorder that is **most closely** associated with each cell type.

Number: _____
Disorder:
 Colour-blindness **Neural deafness** **Permanent vertigo**



Numerical Response #3

Four structures numbered above that are involved in hearing are _____, _____, _____, and _____.

When a car's airbag deploys, there is a rapid increase in air pressure that results from the rapid expansion of gases inside the airbag. This expansion causes pressure waves that can damage the inner ear.

Structures of the Human Ear

- 1 Ossicles
- 2 Cochlea
- 3 Auditory canal
- 4 Tympanic membrane

Numerical Response #4

The sequence in which the highly compressed pressure waves created by the deployment of an airbag travel through the structures of the human ear is _____, _____, _____, and _____.

Some Structures of the Nervous System

- 1 Optic nerve
- 2 Photoreceptor
- 3 Occipital lobe

Numerical Response #5

After light enters the eye, the order in which the structures numbered above are stimulated is _____, _____, and _____.

The pupillary reflex is a reflex that occurs in response to varying intensities of light entering the eye.

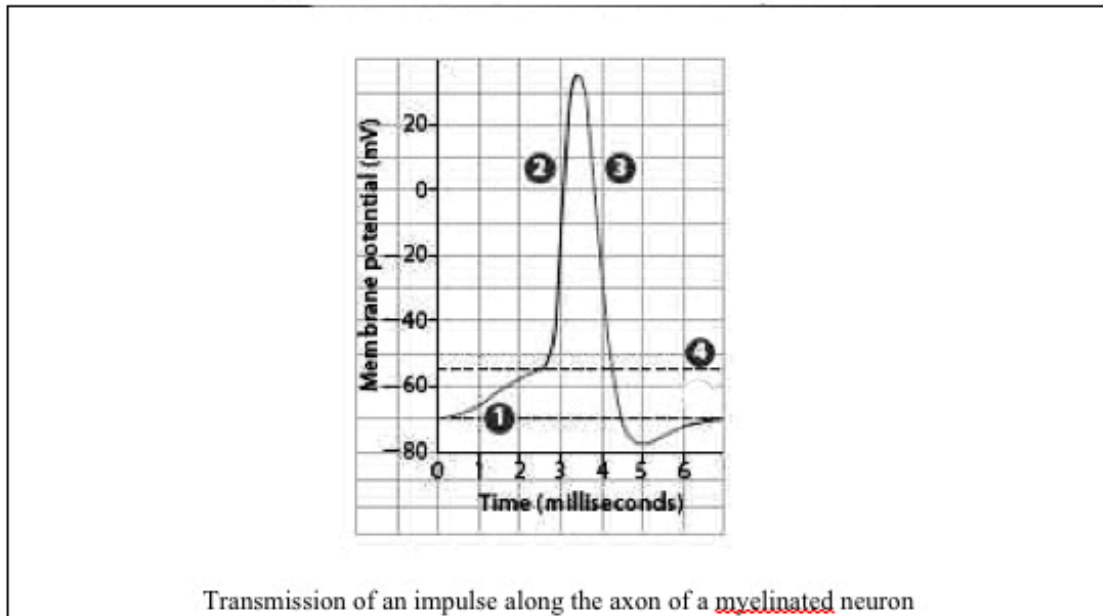
Some Events in the Pupillary Reflex

- 1 Pupil diameter changes
- 2 Motor neuron depolarizes
- 3 Light receptors stimulated
- 4 Sensory neuron depolarizes

Numerical Response #6

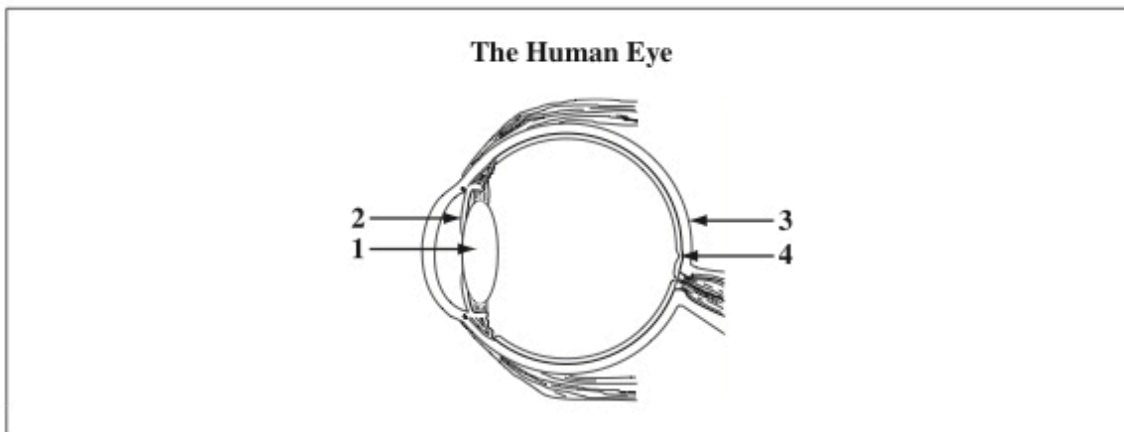
The order in which the events numbered above occur during the pupillary reflex is _____, _____, _____, and _____.

(Record all **four digits** of your answer in the numerical-response section on the answer sheet.)



#7 Match the events in the transmission of an action potential to the specific region on the graph. Record your **four-digit response** in the numerical-response section on the answer sheet.

	_____	_____	_____
Region on graph:	<u>depolarization</u>	<u>resting potential</u>	<u>threshold potential</u>
			<u>repolarization</u>



Numerical Response #8

Match each of the structures of the human eye numbered in the diagram above with the descriptions given below.

Structure:	_____	_____	_____
Description:	Maintains shape of eye	Focuses light	Regulates entry of light
			Contains light-sensitive pigments