

# Life Science Answer Keys

## Week 1

### Teacher Supplement Activities Cladistics Activity

See charts at the end of the Answer Key section.

### Weekly Literacy Connection

Carl Linnaeus (also known as Carl von Linné) was the Swedish scientist who is widely known for developing our system for the classification of living things. It is a universal code that was developed and adopted by scientists in 1902, but there have been a few changes to our way of thinking since then! By the time he was finished, Linnaeus had named or recorded 13,000 species of plants and animals using his system and the language of Latin. Amazingly, however, he left room in his classification system for mythical beasts and “monstrous” humans that he believed existed apart from the *Homo sapiens* we know so well. We do know that there are many, many species out there in the world left to be discovered, recorded and named. Are they mythical beasts, though? What do you think?

### Assessment

1. The five-kingdom classification system was proposed in 1969 and later adopted by most biologists. (Cite sources: “Classify and Describe Living Things” Cover Story, p. 1) LOW/2
2. Taxonomy is the science of classifying things, and taxonomists classify living and non-living things alike—animals, plants, rocks,

chemicals, etc. (Cite sources: “Classifying Creatures with Taxonomy” Lesson, pp. 2-3) MODERATE/2

3. Members of the same species share similar characteristics and can mate. (Cite sources: “What is a species?” This Week’s Question, p. 3) MODERATE/2
4. B MODERATE/2
5. D MODERATE/2
6. C MODERATE/2
7. D MODERATE/2
8. B MODERATE/2
9. D MODERATE/3
10. C MODERATE/3

## Week 2

### Teacher Supplement Activities Assessment

1. Proteins are being repaired and discarded in cells; food and oxygen are generating electricity; and chemicals are being transported. (Cite sources: “Survivor: Inside the Cell Membrane” Cover Story, p. 1) MODERATE/2
2. Plant cell walls have an outer barrier made of cellulose to give them extra support. “Cells: The Body’s Building Blocks” Lesson, pp. 2-3) LOW/2
3. An organ is a structure made up of two or more tissues that work together to do a specific job. (Cite sources: “Cells: The Body’s Building Blocks” Lesson, pp. 2-3) MODERATE/2
4. D MODERATE/2
5. B MODERATE/2
6. C MODERATE/2
7. D MODERATE/2
8. A MODERATE/2
9. B MODERATE/3
10. B MODERATE/3

## Week 3

### Student Edition Activities Page 3, In the Lab

#### If Mendel Grew Jelly Beans

There are several combinations that can be made by selecting two jelly beans randomly. The Punnett squares at the end of the Answer Key section show the possibilities.

### Page 4, How Unique Am I?

See chart at the end of the Answer Key section.

### Teacher Supplement Activities Math Connection

1. 12/16 or 3/4 (12-to-16 or 3-to-4)
2. 4/16 or 1/4
3. 9/16
4. 3/16
5. 3/16
6. 1/16

### Assessment

1. Identical twins are born with the same phenotypes, or observable traits, but experiences or environmental factors can turn genes off and on over time, creating slight differences. (Cite sources: “Why do identical twins look alike?” This Week’s Question, p. 3) MODERATE/2
2. In his first test, Mendel crossed tall pea plants with short ones and planted the seeds. (Cite sources: “Gregor Mendel” Spotlight, p. 3) LOW/2
3. The Human Genome Project determined that we all share over 99 percent of our genes. (Cite sources: “Genetics and Heredity” Lesson, pp. 2-3) MODERATE/2
4. D MODERATE/2

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5. A MODERATE/2
6. D MODERATE/2
7. C MODERATE/2
8. B MODERATE/2
9. C MODERATE/3
10. B MODERATE/3

## Week 4

### Teacher Supplement Activities Assessment

1. Polygraphs can detect stress reactions in the body. Stress reactions can occur when someone is being deceptive. (Cite sources: "Lie Detectors!" p. 3) MODERATE/3-4
2. Age progression usually begins with a photograph. (Cite sources: "Forensic Art" Technology & Science, p. 2) LOW/2
3. Fingerprints help reduce friction between our hands and the objects we grab. This change in friction can help us handle objects better. (Cite sources: "What are prints for?" p. 1) MODERATE 3-4
4. B MODERATE/2
5. D MODERATE/2
6. B MODERATE/2
7. C LOW/2
8. Students' answers will vary, but should include that accuracy and fairness are necessary to ensuring the right person is punished for the crime committed.
9. C MODERATE/3
10. D MODERATE/3

## Week 5

### Student Edition Activities

#### Let's Investigate

#### Suggested Design

Independent variable: amount of water

Dependent variable: how long it

takes a seed to germinate

Hypothesis: If a seed is exposed to more water, then it will germinate faster.

Constants: soil, type of water, type of seed, identical containers, light conditions, air temperatures

Control: students should predict or research the recommended amount of water for their type of seed and use that amount of water for the control

### Teacher Supplement Activities Weekly Literacy Connection Plant a Terrarium Extension Questions

1. Moss will need lots of moisture, a surface such as rock or bark to cling to, and should be partially near or on the soil. It should not be in direct sunlight, because then it will not stay moist.
2. Closing the terrarium allows the water cycle to occur in the terrarium. The plants will release water vapor into the air, which will be trapped inside the terrarium, condense and trickle down the sides, back onto the soil.
3. If you remove the top, the terrarium would dry up and you would need to water the plants frequently.
4. In direct, bright sunlight, the terrarium would probably get too warm inside, and the plants would be distressed. The terrarium needs to cool off so that water vapor can condense, but if the inside temperature gets too warm, it will be difficult for the temperature to decrease enough for this to happen.
5. Water is warming and

evaporating. When the terrarium cools, the water vapor condenses on the side of the bottle and the soil surface. The plants' leaves are transpiring, releasing water vapor into the air.

### Math Connection

1. 200 liters/70 days = about 2.8 liters per day per plant. (That's larger than most bottles of soda!)
2. 2.8 liters per day per plant x 30,000 plants = 84,000 liters per day
3. 200 liters x 30,000 plants = 6 million liters per growing season

### Assessment

1. Ocean plants don't need strong stems because they are supported by water. (Cite sources: "Plants—From Water to Land" Lesson, pp. 2-3) MODERATE/2
2. Asexual reproducing plants, such as ivy and strawberries send out "runner stems." (Cite sources: "How Plants Reproduce" Lesson, p. 2) LOW/2
3. Liverworts and mosses are examples of nonvascular plants (Cite sources: "Plants—From Water to Land" Lesson, pp. 2-3) MODERATE/2
4. B MODERATE/2
5. C MODERATE/2
6. C MODERATE/2
7. D MODERATE/2
8. C MODERATE/2
9. A MODERATE/3
10. D MODERATE/3

## Week 6

### Student Edition Activities

# Life Science Answer Keys

## Observe an Isopod

1. Students should observe more isopods on the wet area of paper towel.
2. They prefer dark, damp areas.
3. Students should observe 3 segments.
4. Students should observe 6 legs.
5. Yes, an isopod is an insect. It has six legs that bend, and it has an exoskeleton. It also has three segments.

## Let's Investigate

- Students should infer that many eggs of frogs or insects never hatch, and/or many young never grow to maturity. Either the conditions (weather, moisture, location, etc.) are unfavorable for survival, or eggs and young are eaten by predators before hatching or growing to maturity.
- Students may also point out that insects and frogs live most of their lives away from humans, which is why we don't spend our days seeing millions of them. They may also point out how small they are, so even if we are surrounded by them, they are not always noticeable to us.

## Teacher Supplement Activities Content Blackline Master/ Math Connection

1. A human can run 3 times faster than a chicken.
2. A wart hog would come in first place, a human would come in second and an elephant would come in third.
3. Cheetahs use their speed to catch the prey they need to survive.

4. Antelopes use their speed to outrun predators.
5. A garden snail can travel 158.4 feet per hour. (0.03 miles/hour x 5,280 feet/mile)

## Weekly Literacy Connection Assessment

1. Feathers are a bird's most important feature. They provide warmth, camouflage and lift for flying. (Cite sources: "Birds" Lesson, p. 3) MODERATE/2
2. Scientists believe all birds evolved from an extinct dinosaur that lived 140 million years ago called an archaeopteryx. (Cite sources: "Birds" Lesson, p. 3) LOW/2
3. During the pupa stage, the insect wraps itself into a cocoon, or chrysalis. (Cite sources: "Insects" Lesson, p. 3) MODERATE/2
4. D MODERATE/2
5. D MODERATE/2
6. B MODERATE/2
7. A MODERATE/2
8. A MODERATE/2
9. D MODERATE/3
10. C MODERATE/3

## Week 7

### Student Edition Activities All Those Birds!

Beaks—cardinal, hawk, hummingbird, duck, heron  
Feet—eagle, chicken, duck, robin, ostrich

### Let's Investigate

1. Students should recognize that the katydid lives in an environment of brown stems, sticks and green leaves.
2. The katydid is adapted to blend into its environment

with wings that look like leaves.

3. Anything that would destroy the green leaf shrubs, like drought, fire, disease or human destruction would change the katydid's environment.
4. No, the katydid cannot change its appearance rapidly. It would take a genetic accident or mutation and many generations before the insect's appearance would change. So if the environment changed rapidly, katydids would have to move to another leafy environment within their range, or they would risk living in an environment where their camouflage is ineffective.

## Teacher Supplement Activities Math Connection

1. 90 feet
2.  $1,000,000 \text{ acres} / 120,000 \text{ acres/year} = 8.3 \text{ years}$

## Assessment

1. Some animals are not able to adapt to changing environments quickly enough to avoid becoming endangered. Others are subject to over-exploitation, or the dangers of pollution and habitat destruction. (Cite sources: "Why are some species endangered?" This Week's Question, p. 3) MODERATE/2
2. Most plants use structural adaptation because they cannot run away from threats like animals can. (Cite sources: "Adapted for Survival" Lesson, pp. 2-3) LOW/2

# Life Science Answer Keys

3. Humans can change environments permanently by converting natural landscape to farmland, damming and flooding rivers and building on habitats. (Cite sources: “Changing Environments” Everyday Science, p. 2) MODERATE/2
4. B MODERATE/2
5. D MODERATE/2
6. A MODERATE/2
7. D MODERATE/2
8. D MODERATE/2
9. C MODERATE/3
10. A MODERATE/3

## Week 8

### Student Edition Activities

#### Do Plants Compete for Resources?

1. Students should observe that the plants in Pot A have more space, and those in Pot B are much closer together. Encourage students to note any other differences, such as the height of plants, dry or brown patches or tips, color and thickness of leaves.
  2. Answers will vary depending on student predictions.
  3. Plants need nutritious soil, sunlight, water and space to survive. They were competing for all of these resources in both pots.
  4. There was more competition for nutrients, water and space in Pot B. Although both pots were equally exposed to sunlight the plants in Pot B had to struggle to reach out of the shadow of neighboring plants to expose themselves to enough light energy to grow. The plants in Pot B are stressed and weakened, so they are less likely to survive than the plants in Pot A.
- Let’s Investigate**
1. Make a list of the different populations of living organisms that might use the tree and yard as a habitat. Students may list small animals like squirrels, birds, insects, moss and fungi or mushrooms.
  2. What would happen if a violent storm uprooted the tree, and the tree was removed? How will the backyard ecosystem change? The leaves and bark, food and shelter for many animals would be gone. There would be fewer dead leaves on the ground, so fewer nutrients would be returned to the soil.
  3. What abiotic factors will be affected? There would be less shade and more sunlight. The temperature of the yard will be slightly warmer because of the reduced shade. More water would reach the ground when it rained or snowed. The soil might be less nutritious than before because there would be fewer decomposing dead leaves or twigs on the ground.
  4. What biotic factors will be affected? Any living organisms that used to use the tree for food or shelter would have to move to a new source. Grasses and plants that used to live beneath the shade of the tree will have to try to survive in more direct sunlight and warmer temperatures.
  5. Predict how the backyard populations will change. Those plants that cannot

survive in the new conditions will die, and other species that need more light and warmth will grow there instead. Animals will have to move to other trees or shrubs for food and shelter.

#### Teacher Supplement Activities Assessment

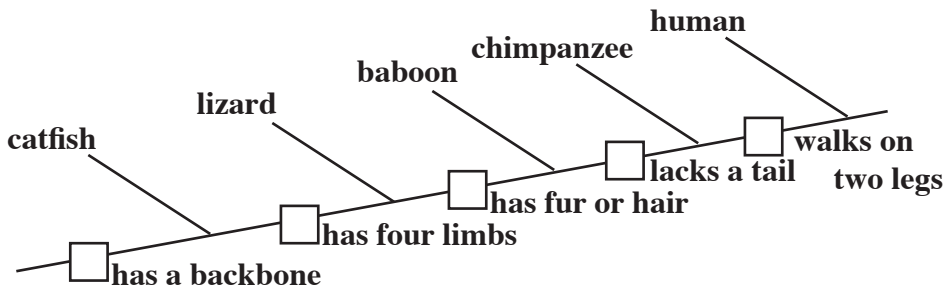
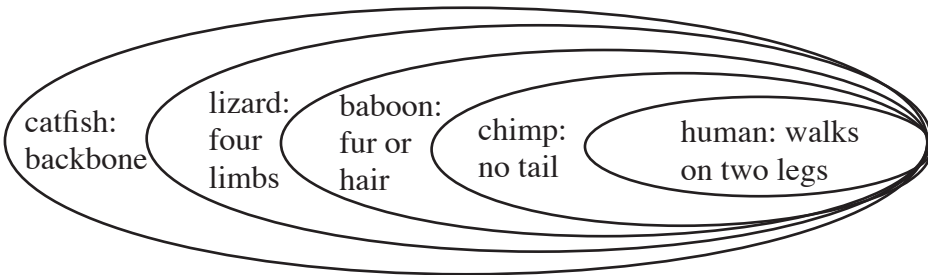
1. A food chain is a simple diagram of the flow of energy from one organism to another in a linked sequence. A food web is a diagram of interconnected food chains. Both show the flow of energy in an ecosystem, but the food web shows more relationships between organisms. (Cite sources: “Everything is Somebody’s Food” Lesson, pp. 2-3) MODERATE/2-3
2. A parasite is an organism that lives off of another organism, harming it in the process. (Cite sources: “Ecology—the Study of Living and Nonliving Things” Lesson, pp. 2-3) MODERATE/3
3. Biotic refers to the living factors in an ecosystem. Bio is a Latin prefix that means life. (Cite sources: “Ecology—the Study of Living and Nonliving Things” Lesson, pp. 2-3) MODERATE/2
4. C MODERATE/2
5. D MODERATE/2
6. B MODERATE/2
7. B MODERATE/2
8. B MODERATE/2
9. A MODERATE/3
10. D MODERATE/3

# Life Science Answer Keys

## Week 1

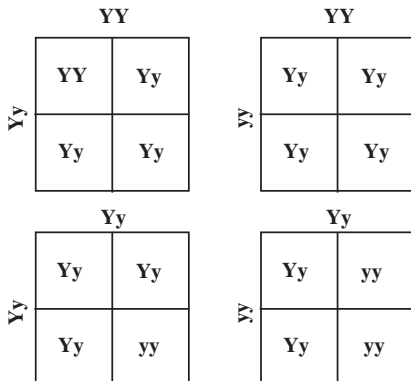
### Cladistics Activity, Teacher Supplement

Traits	chimpanzee	lizard	human	catfish	baboon
has a backbone	√	√	√	√	√
has four limbs	√	√	√		√
has fur or hair	√		√		√
lacks a tail	√		√		
walks on two legs			√		
Total √'s	4	2	5	1	3



## Week 3

### Page 3, Student Edition

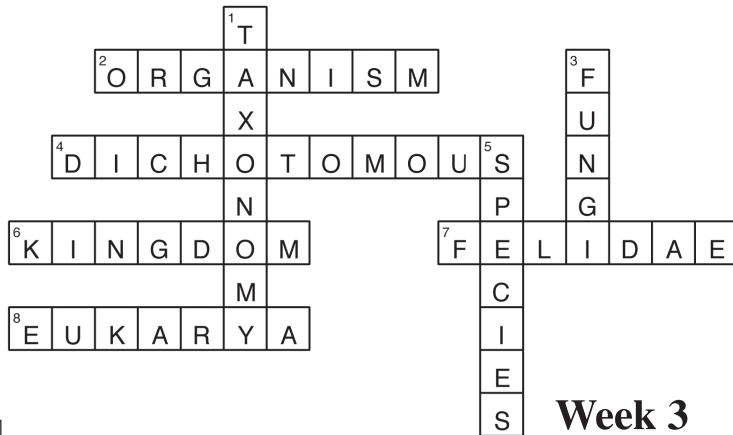


### Page 4, How Unique Am I?

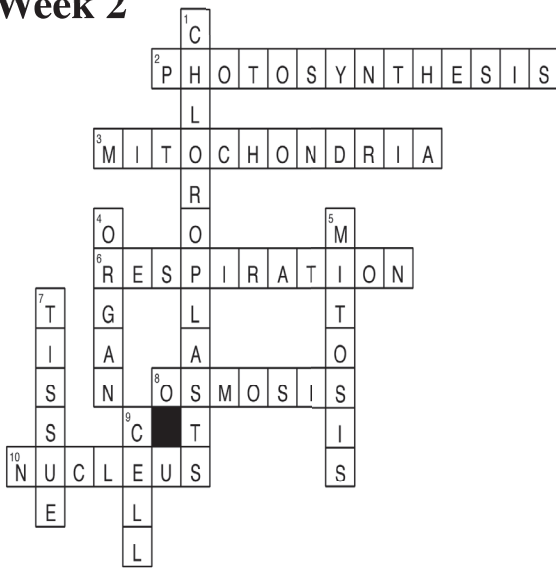
Trait	Dominant	Recessive
Tongue Rolling	TT or Tt	tt
Free Ear Lobe	EE or Ee	ee
Hand Clasping	LL or Ll	ll
Pigmented Iris	PP or Pp	pp
Bent Little Finger	FF or Ff	ff

# Life Science Crossword Answers

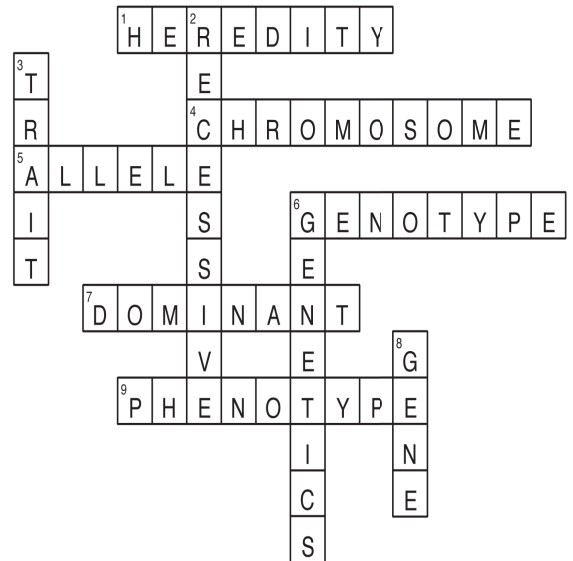
## Week 1



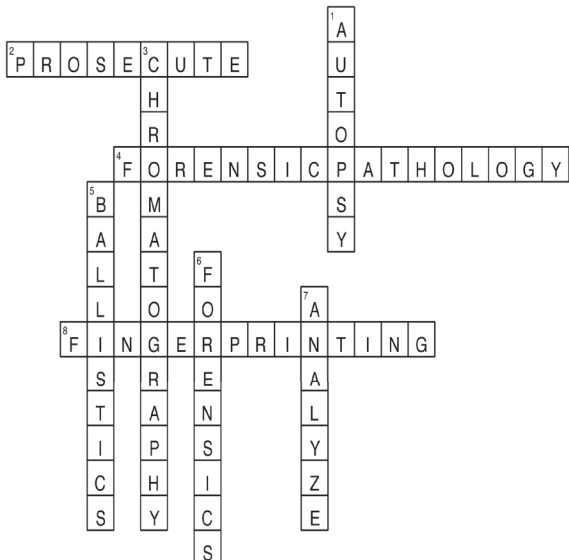
## Week 2



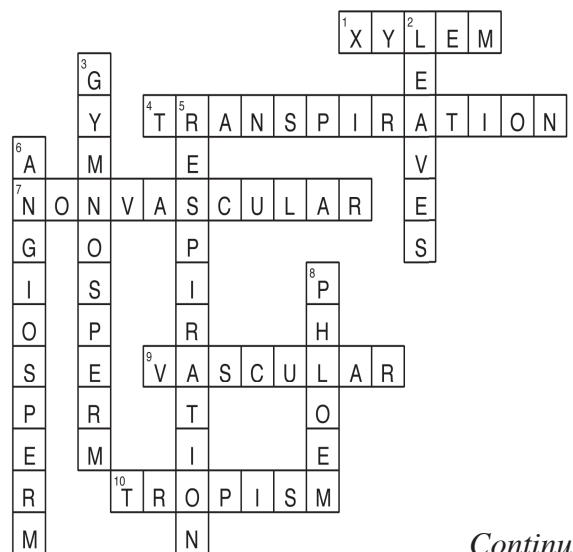
## Week 3



## Week 4



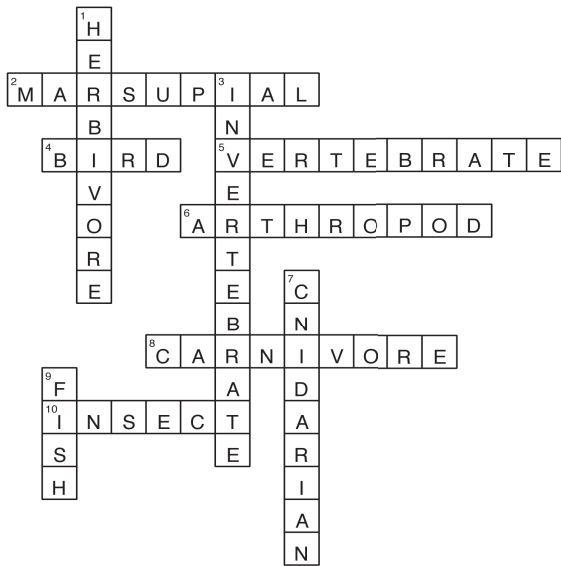
## Week 5



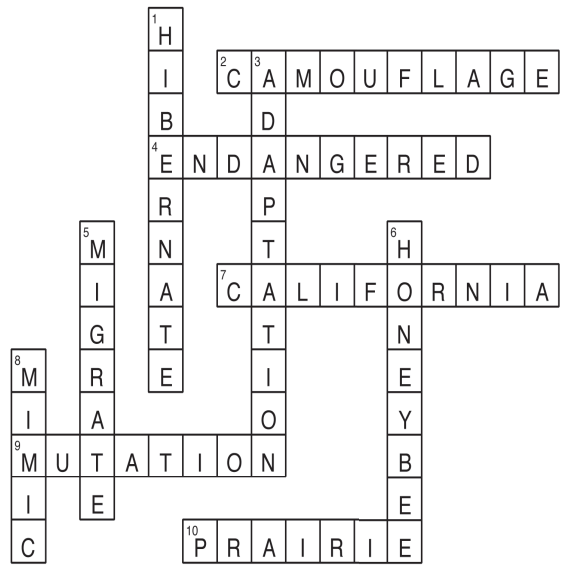
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# Life Science Crossword Answers

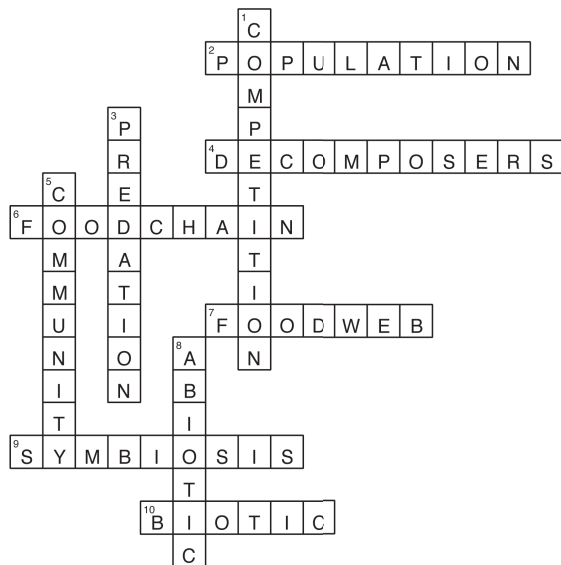
## Week 6



## Week 7



## Week 8



Name: \_\_\_\_\_ Date: \_\_\_\_\_

Science 6th-8th Grade Studies Weekly

## Assessment Answer Sheet

Week: \_\_\_\_\_

1. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. (A) (B) (C) (D) 7. (A) (B) (C) (D)

4. (A) (B) (C) (D) 8. (A) (B) (C) (D)

5. (A) (B) (C) (D) 9. (A) (B) (C) (D)

6. (A) (B) (C) (D) 10. (A) (B) (C) (D)