

THE ACT

# ABBREVIATED TEST BOOKLET

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This booklet provides sample test questions from each of the four content areas measured by the multiple-choice tests in the ACT:

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## ENGLISH TEST

**DIRECTIONS:** In the passage that follows in this abbreviated version of the test, certain words and phrases are underlined and numbered. In the right-hand column, you will find alternatives for the underlined part. In most cases, you are to choose the one that best expresses the idea, makes the statement appropriate for standard written English, or is worded most consistently with the style and tone of the passage as a whole. If you think the original version is best, choose "NO CHANGE." In some cases, you will find in the right-hand column a question about the underlined part. You are to choose the best answer to the question.

You will also find questions about a section of the passage, or about the passage as a whole. These questions do not refer to an underlined portion of the passage, but rather are identified by a number or numbers in a box.

For each question, choose the alternative you consider best and then circle that answer in the test booklet. Read the passage through once before you begin to answer the questions that accompany it. For many of the questions, you must read several sentences beyond the question to determine the answer. Be sure that you have read far enough ahead each time you choose an alternative.

## PASSAGE I

## A Voice of Her Own

Sandra Cisneros, perhaps the best known Latina author in the United States, writes poems and stories <sup>1</sup> whose titles alone—"Barbie-Q," "My Lucy Friend Who Smells Like Corn," "Woman Hollering Creek"—engage potential readers' curiosity. <sup>2</sup>

Ironically, this renowned writer, whose books are printed on recycled paper, <sup>3</sup> did not do well in school. When she lectures at schools and public libraries, Cisneros presents the evidence. <sup>4</sup> An elementary school report card containing *Cs*, *Ds*, and a solitary *B* (for conduct). Cisneros has a theory to explain her low grades: teachers had low expectations for Latina and Latino students from Chicago's South Side.

1. A. NO CHANGE  
B. author and writer  
C. author and novelist  
D. wordsmith and author
2. F. NO CHANGE  
G. potential, reader's  
H. potential, readers  
J. potential readers
3. A. NO CHANGE  
B. writer, who is recognized by her orange and black eyeglasses,  
C. writer, who likes to write at night,  
D. writer
4. F. NO CHANGE  
G. evidence: an  
H. evidence; an  
J. evidence an

Despite the obstacles that she faced in school, Cisneros completed not only high school but also college. Her persistence paid off in her twenties, when Cisneros was admitted prestigious to the Writers' Workshop at the University of Iowa.

Cisneros soon observed that most of her classmates at the university seemed to have a common set of memories, based on middle-class childhoods, from which to draw in their writing. Cisneros felt decided out of place.

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She decided to speak from her own experience. Her voice, which by being one of a Latina living outside the mainstream, found a large and attentive audience in 1984 with the publication of her first short story collection, *The House on Mango Street*.

Today, this book is read by middle school, high school, and college students across the United States.

5. The best placement for the underlined portion would be:
  - A. where it is now.
  - B. before the word *admitted*.
  - C. before the word *Writers'*.
  - D. before the word *Workshop*.
6. F. NO CHANGE  
G. furthermore  
H. nevertheless  
J. therefore
7. A. NO CHANGE  
B. Cisneros herself,  
C. Cisneros, herself  
D. Cisneros,
8. F. NO CHANGE  
G. deciding  
H. decidedly  
J. decidedly and
9. Which of the following true statements, if added here, would best serve as a transition between the challenges Cisneros faced as an aspiring writer and her success in meeting those challenges?
  - A. She did not know what to do.
  - B. Then she had a breakthrough.
  - C. At that point she almost went home to Chicago.
  - D. She wondered whether she was in the right field.
10. F. NO CHANGE  
G. voice—that of a Latina living outside the mainstream—  
H. voice, being one of a Latina living outside the mainstream, it  
J. voice—in which it was a Latina living outside the mainstream—
11. A. NO CHANGE  
B. 1984. With  
C. 1984; with  
D. 1984, with,
12. F. NO CHANGE  
G. In the future,  
H. Meanwhile,  
J. At the same time,



Cisneros uses her influence as a successful writer to help other Latina and Latino writers get their works published. But having made the argument that, in order for large numbers of young Latinos to achieve literary success, the educational system itself must change.

Cisneros hints that she succeeded in spite of the educational system. “I’m the exception,” she insists, “not the rule.”

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13. A. NO CHANGE  
B. she argues that,  
C. arguing that,  
D. she argues that, when
14. Which choice best shows that Cisneros is emphatic about expressing the belief stated in this sentence?  
F. NO CHANGE  
G. says  
H. supposes  
J. asserts
15. The writer is considering deleting the preceding sentence. If the writer decided to delete this sentence, the paragraph would primarily lose a statement that:  
A. enhances the subject and the setting.  
B. provides support for a point previously made.  
C. humorously digresses from the main topic of the paragraph.  
D. contradicts Cisneros’s claim made earlier in the essay.

**END OF TEST 1**



# MATHEMATICS TEST

**DIRECTIONS:** Solve each problem in this abbreviated version of the test, choose the correct answer, and then circle that answer in the test booklet.

Do not linger over problems that take too much time. Solve as many as you can; then return to the others in the time you have left for this test.

You are permitted to use a calculator on this test. You may use your calculator for any problems you choose,

but some of the problems may best be done without using a calculator.

Note: Unless otherwise stated, all of the following should be assumed.

1. Illustrative figures are NOT necessarily drawn to scale.
2. Geometric figures lie in a plane.
3. The word *line* indicates a straight line.
4. The word *average* indicates arithmetic mean.

## DO YOUR FIGURING HERE.

1. Ten boxes of books were delivered to the school library. There were 50 books in each box, except for the last box, which contained only 40 books. How many books did the library receive in this delivery?

- A. 50
- B. 450
- C. 490
- D. 500
- E. 540

2. What is the solution of  $x + 3.4 = 20.91$  ?

- F. 24.31
- G. 23.95
- H. 17.87
- J. 17.51
- K. 6.15

3. Anton went to Mexico during summer vacation with his Spanish class. He recorded the number of pesos he spent each day in a table, as shown below. What was the mean number of pesos he spent per day?

July	1	2	3	4	5
Pesos spent	250	100	150	100	400

- A. 100
- B. 150
- C. 200
- D. 220
- E. 300

4. If  $a = 10$ , then which of the following represents 8,003 ?

- F.  $8a + 3$
- G.  $80a + 3$
- H.  $8a^2 + 3$
- J.  $8a^3 + 3$
- K.  $8a^4 + 3$



DO YOUR FIGURING HERE.

5. A bag contains 4 red jelly beans, 5 green jelly beans, and 3 white jelly beans. If a jelly bean is selected at random from the bag, what is the probability that the jelly bean selected is green?

- A.  $\frac{1}{12}$   
 B.  $\frac{1}{5}$   
 C.  $\frac{5}{23}$   
 D.  $\frac{5}{12}$   
 E.  $\frac{5}{7}$

6. An earring manufacturing company has fixed costs of \$10,000 per month and production costs of \$0.60 for each pair of earrings it makes. If the company produces  $x$  pairs of earrings in a month, which of the following expressions represents the total of the company's monthly costs?

- F.  $\$10,000x$   
 G.  $\$10,000 + x$   
 H.  $\$10,000x + \$0.60$   
 J.  $\$10,000 + \$0.60x$   
 K.  $(\$10,000 + \$0.60)x$

7. For what value of  $a$  is  $x = 3$  a solution to the equation  $x + 3 = ax + 9$ ?

- A. 1.5  
 B. 1  
 C. -1  
 D. -1.5  
 E. -3

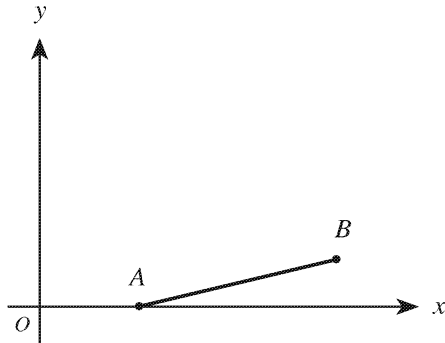
8. Quadrilateral  $ABCD$  has vertices  $(-2, -1)$ ,  $(4, -3)$ ,  $(5, 2)$ , and  $(-1, 3)$  in the standard  $(x, y)$  coordinate plane. Suppose  $ABCD$  is translated 2 units to the left and 1 unit down, forming quadrilateral  $A'B'C'D'$ . Which of the following shows the coordinates of the vertices of  $A'B'C'D'$ ?

- F.  $(-4, -2)$ ,  $(2, -4)$ ,  $(3, 1)$ ,  $(-3, 2)$   
 G.  $(-3, -3)$ ,  $(3, -5)$ ,  $(4, 0)$ ,  $(-2, 1)$   
 H.  $(-2, -2)$ ,  $(4, -4)$ ,  $(5, 1)$ ,  $(-1, 2)$   
 J.  $(0, 0)$ ,  $(6, -2)$ ,  $(7, 3)$ ,  $(1, 4)$   
 K.  $(4, 2)$ ,  $(-8, 6)$ ,  $(-10, -4)$ ,  $(2, -6)$



9. The scales on both axes of the standard  $(x,y)$  coordinate plane below are the same. Of the following, which is the best estimate for the slope of  $\overline{AB}$  ?

DO YOUR FIGURING HERE.



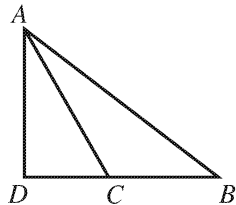
- A. 4  
 B.  $\frac{3}{4}$   
 C.  $\frac{1}{4}$   
 D.  $-\frac{1}{4}$   
 E. -4
10. A truck sprang a leak at the bottom of its radiator, which held 480 ounces of fluid when it started to leak, and started losing radiator fluid at a constant rate of 4 ounces per minute. Suppose that the radiator continued to leak at this constant rate and that the truck, traveling at 35 miles per hour, could continue traveling at this rate until its radiator was completely empty. In how many *miles* would the radiator be empty?
- F. 13.7  
 G. 17.5  
 H. 35.0  
 J. 70.0  
 K. 120.0
11. For  $y \neq 0$ ,  $\frac{y^8}{y^2}$  is equivalent to:

- A. 1  
 B. 4  
 C.  $y^3$   
 D.  $y^4$   
 E.  $y^6$





12. In  $\triangle ABD$  below, points  $D$ ,  $C$ , and  $B$  are collinear,  $\overline{AD}$  is perpendicular to  $\overline{DB}$ , and  $\overline{AC}$  bisects  $\angle DAB$ . If the measure of  $\angle CBA$  is  $40^\circ$ , what is the measure of  $\angle ACB$ ?

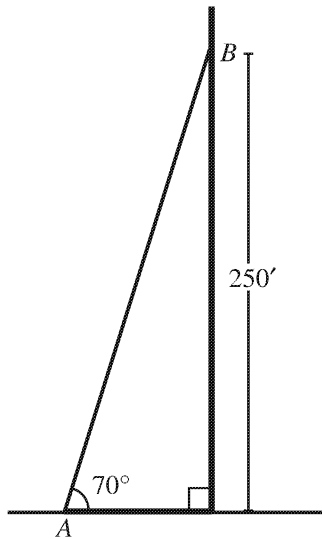


- F.  $115^\circ$   
 G.  $112.5^\circ$   
 H.  $110^\circ$   
 J.  $107.5^\circ$   
 K.  $105^\circ$
13. You have enough material to build a fence 40 meters long. If you use it all to enclose a square region, how many square meters will you enclose?
- A. 160  
 B. 100  
 C. 80  
 D. 40  
 E. 20
14. One neon sign flashes every 6 seconds. Another neon sign flashes every 8 seconds. If they flash together and you begin counting seconds, how many seconds after they flash together will they next flash together?
- F. 48  
 G. 24  
 H. 14  
 J. 7  
 K. 2

DO YOUR FIGURING HERE.



15. The radio station WEST is erecting a new transmitting tower that is 280 feet tall. A support wire will be attached to the ground at point  $A$  and to the tower 250 feet up at point  $B$ , as shown below. The wire must be at least as long as  $\overline{AB}$ . Which of the following expresses the length of  $\overline{AB}$ , in feet?



- A.  $250 \cos 70^\circ$
- B.  $250 \sin 70^\circ$
- C.  $250 \tan 70^\circ$
- D.  $\frac{250}{\cos 70^\circ}$
- E.  $\frac{250}{\sin 70^\circ}$

DO YOUR FIGURING HERE.

END OF TEST 2



## READING TEST

**DIRECTIONS:** There is one passage in this abbreviated version of the test. The passage is followed by several questions. After reading the passage, choose the best answer to each question and circle the answer in the test booklet. You may refer to the passage as often as necessary.

## Passage I

**SOCIAL SCIENCE:** This passage, which describes land practices in the commons (tracts of land that belonged to and were used by a community as a whole), and the enclosure movement (when the commons were taken over by private interests and fenced off), is adapted from the essay "The Place, the Region, and the Commons" by Gary Snyder, which is included in his book *The Practice of the Wild* (©1990 by Gary Snyder).

I stood with my climbing partner on the summit of Glacier Peak looking all ways round, ridge after ridge and peak after peak, as far as we could see. He said: "You mean there's a senator for all this?" It is easy to think there are vast spaces on earth yet unadministered, perhaps forgotten, or unknown, but it is all mapped and placed in some domain. In North America there is a lot that is in the public domain, which has its problems, but at least they are problems we are all enfranchised to work on.

American public lands are the twentieth-century incarnation of a much older institution known across Eurasia—in English called the "commons"—which was the ancient mode of both protecting and managing the wilds of the self-governing regions. It worked well enough until the age of market economies, colonialism, and imperialism. Let me give you a kind of model of how the commons worked.

Between the extremes of deep wilderness and the private plots of the farmstead lies a territory which is not suitable for crops. In earlier times it was used jointly by the members of a given tribe or village. This area, embracing both the wild and the semi-wild, is of critical importance. It is necessary for the health of the wilderness because it adds big habitat, overflow territory, and room for wildlife to fly and run. It is essential even to an agricultural village economy because its natural diversity provides the many necessities and amenities that the privately held plots cannot. It enriches the agrarian diet with game and fish. The shared land supplies firewood, poles and stone for building, clay for the kiln, herbs, dye plants, and much else. It is especially important as seasonal or full-time open range for cattle, horses, goats, pigs, and sheep.

In the abstract the sharing of a natural area might be thought of as a matter of access to "common pool resources" with no limits or controls on individual exploitation. The fact is that such sharing developed over

millennia and always within territorial and social contexts. In the peasant societies of both Asia and Europe there were customary forms that gave direction to the joint use of land. They did not grant free access to outsiders, and there were controls over entry and use by member households. The commons is both specific land and the traditional community institution that determines the carrying capacity for its various subunits and defines the rights and obligations of those who use it, with penalties for lapses. Because it is traditional and *local*, it is not identical with today's "public domain," which is land held and managed by a central government. Under a national state such management may be destructive (as it is becoming in Canada and the United States) or benign, but in no case is it locally managed. One of the ideas in the current debate on how to reform our public lands is that of returning them to regional control.

An example of traditional management: what would keep one household from bringing in more and more stock and tempting everyone toward overgrazing? In earlier England and in some contemporary Swiss villages, the commoner could only turn out to common range as many head of cattle as he could feed over the winter in his own corrals. This meant that no one was allowed to increase his herd from outside with a cattle drive just for summer grazing.

There is a well-documented history of the commons in relation to the village economies of Europe and England. In England from the time of the Norman Conquest the knights and overlords began to gain control over the many local commons. From the fifteenth century on the landlord class increasingly fenced off village-held land and turned it over to private interests. The enclosure movement was backed by the big wool corporations who found profit from sheep to be much greater than that from farming. The wool business had a destructive effect on the soils and dislodged peasants. The arguments for enclosure in England—efficiency, higher production—ignored social and ecological effects and served to cripple the sustainable agriculture of some districts.

The enclosures created a population of rural homeless who were forced in their desperation to become the world's first industrial working class. The enclosures were tragic both for the human community and for natural ecosystems. The fact that England now has the least forest and wildlife of all the nations of Europe has much to do with the enclosures.

1. As it is used in line 12, the word *incarnation* most nearly means:
  - A. import.
  - B. version.
  - C. area.
  - D. relationship.
2. The author's primary aim in this passage is to:
  - F. criticize Canadian and United States management of public domain lands.
  - G. describe traditional commons and explain the effects of their disappearance.
  - H. praise the commons movement and explain how the enclosure movement benefitted from it.
  - J. persuade members of central governments to tighten their control over commonly held land.
3. During the period of enclosure in England, production and efficiency were increased at the expense of the:
  - A. landlord class, which had to fence commons land.
  - B. local communities and their environment.
  - C. profits made by big wool corporations.
  - D. knights and overlords who owned the land.
4. According to the passage, what would keep a commoner from overgrazing the commons?
  - F. A reminder that this could be harmful to the community
  - G. A realization that profits would eventually diminish
  - H. A belief that no one in the community would do this
  - J. A rule listing the limits to the commoner's herd size
5. The passage implies that the number of commons in Europe diminished primarily because of:
  - A. dissatisfaction on the part of villagers.
  - B. displacement of the population of rural homeless.
  - C. increased production by farmers, villagers, and tribal members.
  - D. greed on the part of landowners and corporations.
6. As it is used in line 5, the word *unadministered* most nearly means *not*:
  - F. farmed.
  - G. crossed.
  - H. given to people.
  - J. governed.
7. According to the passage, what happened to change the traditional commons?
  - A. Landowners fenced off portions of it which were then used for private purposes.
  - B. The rural homeless population left the land and moved to the cities to take jobs in industry.
  - C. Knights and overlords began to dictate that the commons would be used for farming.
  - D. Peasants fenced the lands because they had been dislodged by big wool corporations.
8. Which of the following statements best summarizes the author's view of commons?
  - F. The commons provided an ideal place where new settlers could build farms, raise their families, and run livestock.
  - G. The commons worked well as an abstract idea, but in fact its maintenance was a burden on village economies.
  - H. The commons provided an area where wild plants and animals could thrive, which benefitted villagers.
  - J. The commons tempted villagers to overgraze, and eventually such overgrazing led to the enclosure movement.
9. The main difference between today's land in the public domain and the traditional commons described in the passage is that:
  - A. land in the public domain is locally controlled, while the commons were controlled by a central government.
  - B. land in the public domain includes both wild and semi-wild areas, while the commons included only land suitable for farming.
  - C. the commons were under the control of a local government, while land in the public domain is controlled by a central government.
  - D. the commons were available for use without limits or controls, while land in the public domain is carefully managed to avoid overuse.
10. According to the passage, the commons provided necessities for villagers that local farms could not provide, such as:
  - F. cattle, horses, goats, pigs, and sheep.
  - G. fish, game, poultry, and grain.
  - H. bricks, clay pots, spices, and fabrics.
  - J. building materials, fish, game, and herbs.

**END OF TEST 3**



## SCIENCE TEST

**DIRECTIONS:** There are two passages in this abbreviated version of the test. Each passage is followed by several questions. After reading a passage, choose the best answer to each question and circle the answer in the test booklet. You may refer to the passages as often as necessary.

You are NOT permitted to use a calculator on this test.

## Passage I

Herbicides are used to control the growth of weeds. An herbicide that may be used safely with one crop species may damage another crop if the latter crop is planted in soil containing residual amounts of the herbicide from an earlier application. Two experiments were performed to study this effect.

## Experiment 1

A botanist filled 90 pots with Soil Type 1. No herbicide was added to the soil in 10 pots. The other pots were divided into groups of 10 and the soil in each group was treated with 10, 20, 50, or 100 ppm of either Herbicide A or B. All other factors were held constant. Ten seeds of a corn hybrid were planted in each pot. After 40 days, the plants were uprooted, oven-dried, and weighed. The results are shown in Table 1.

Table 1		
Herbicide dose (ppm)	Average mass of plants (g)	
	Herbicide A	Herbicide B
10	14.1	15.6
20	12.4	13.7
50	9.3	12.1
100	5.5	9.3
Note: Average plant mass in untreated soil was 16.0 g.		

## Experiment 2

Experiment 1 was repeated with 90 pots of Soil Type 1 and 90 pots of Soil Type 2. The same herbicide doses and corn hybrid were used. All other factors were held constant. After 40 days, the heights of the plants were measured. The results are shown in Table 2.

Table 2				
Herbicide dose (ppm)	Average height of plants (cm)			
	Soil Type 1		Soil Type 2	
	Herbicide A	Herbicide B	Herbicide A	Herbicide B
10	46.3	49.0	50.3	52.5
20	42.0	47.0	44.4	47.0
50	34.1	39.4	40.6	42.3
100	19.6	22.7	30.9	36.4
Note: Average plant height in untreated Soil Type 1 was 50.6 cm; average plant height in untreated Soil Type 2 was 52.7 cm.				

Information on the two soil types used is given in Table 3.

Table 3			
Soil Type	pH	Organic matter (%)	Clay (%)
1	6.9	5.0	16.3
2	6.2	9.5	7.9



1. The results of Experiment 2 indicate that, at every herbicide dose, average plant height was *lowest* under which of the following conditions?
  - A. Herbicide A and Soil Type 1
  - B. Herbicide B and Soil Type 1
  - C. Herbicide A and Soil Type 2
  - D. Herbicide B and Soil Type 2
2. Which of the following sets of plants served as the control in Experiment 1?
  - F. Plants grown in untreated soil
  - G. Plants grown in soil treated with 10 ppm of Herbicide A
  - H. Plants grown in soil treated with 10 ppm of Herbicide B
  - J. Plants grown in soil treated with 100 ppm of Herbicide A
3. Which of the following best explains why the herbicides were applied to the soil instead of directly onto the corn plants?
  - A. Corn plants are not affected when herbicides are applied directly on them.
  - B. Corn plants usually die immediately upon application of herbicides.
  - C. The experiments were testing how herbicides present in the soil affect corn growth.
  - D. The experiments were testing how soil pH affects corn growth.
4. Assume that a second corn hybrid was grown in soil treated with varying doses of a third herbicide (Herbicide C). Based on the results of the experiments, what prediction, if any, about the effect of Herbicide C on the growth of this second corn hybrid can be made?
  - F. Herbicide C would have no effect on the growth of these plants.
  - G. Herbicide C would interfere with plant growth, but only at doses above 50 ppm.
  - H. Herbicide C would interfere with plant growth at low doses, but have no effect at high doses.
  - J. No prediction can be made on the basis of the results.
5. Another set of corn seeds was planted in Soil Type 1 under the same conditions as Experiment 1, except that the soil was treated with 150 ppm of Herbicide A. Based on the results of Experiment 1, one would predict that the approximate average mass of a corn plant after 40 days would be:
  - A. less than 5.5 g.
  - B. between 6.0 g and 9.3 g.
  - C. between 9.4 g and 14.1 g.
  - D. greater than 14.1 g.
6. Which of the following best describes the hypothesis tested in Experiment 2?
  - F. Growing time affects plant height.
  - G. Soil type influences herbicide effects.
  - H. The amount of soil moisture affects herbicide toxicity.
  - J. A combination of herbicides has a greater effect on plant growth than do individual herbicides.
7. Which of the following graphs best illustrates the relationship of average plant mass and herbicide dose in Experiment 1?
 

*Key*

■ Herbicide A  
▨ Herbicide B

**A.**

**C.**

**B.**

**D.**
8. According to Table 3, Soil Type 2 differs from Soil Type 1 in which of the following ways?
  - F. Soil Type 2 is less acidic than is Soil Type 1.
  - G. Soil Type 2 has a higher percent organic matter than does Soil Type 1.
  - H. Soil Type 2 has a higher percent clay content than does Soil Type 1.
  - J. Soil Type 2 contains higher levels of Herbicides A and B than does Soil Type 1.

**Passage II**

Crustal *plates* (sections of Earth's crust) lie on top of a denser layer of material known as the *mantle*, which extends to a depth of 2,900 km, where the core begins. Mantle material moves by a process known as *convection*. In convection, molten or semisolid material is heated from below, rises as large *plumes*, spreads horizontally, cools, and then sinks, creating a *convection cell*. Plates are carried along by the convection cells and plate edges may be forced down into the mantle creating large, cold, *sinking slabs* of crust. Below are two opposing views about the nature of mantle convection.

*Viewpoint 1*

The mantle is composed of 2 layers that are chemically distinct and do not mix. The lower mantle is denser, hotter, enriched in iron and silicon, and under greater pressure than the upper mantle. Convection cells exist only in the 600 km deep upper mantle. Only heat passes between the 2 layers; no actual material is exchanged. The boundary between the mantle layers can be detected with *seismic* (earthquake) waves which speed up significantly at and below a depth of 600 km.

The sinking slabs are dense and cold enough to sink into the upper mantle but not into the lower mantle. Earthquakes have been detected in the sinking slabs, but none below a depth of 600 km. Scientists who believe that slabs penetrate deeper are misinterpreting their seismic data.

*Viewpoint 2*

The whole mantle circulates in convection cells and mixing occurs throughout. The 600 km deep "boundary" is merely a place where pressure transforms the crystal structure of the mantle material. Different crystal structures do not preclude mixing of the entire mantle. Seismic studies have detected sinking slabs of colder rock that had penetrated the mantle to depths between 600 and 1,400 km in many parts of the world.

Mathematical models have shown that the *tilt angle* (angle at which sinking slabs descend into the mantle) of known sinking slabs corresponds much more closely to that expected for whole mantle convection than to tilt angles expected for only upper mantle convection.

9. According to Viewpoint 1, an ascending plume of hot mantle material that originates near a depth of 2,900 km would be able to rise:
  - A. all the way to the bottom of the crust.
  - B. all the way to the surface of Earth.
  - C. only to the bottom of the upper mantle.
  - D. only a few km above that depth.
10. Which of the following statements best describes how the 2 viewpoints are alike?
  - F. Both are based on the nature of rock samples from the deep seafloor.
  - G. Both agree that material from the lower mantle mixes with the upper mantle.
  - H. Both agree that the mantle has the same properties throughout its depth.
  - J. Both depend to some extent on studies using seismic waves.
11. Which of the following hypotheses provides the best compromise between the 2 viewpoints on the current structure of the mantle?
  - A. Convection took place only in the upper mantle when Earth was new, but billions of years later, the entire mantle was involved.
  - B. Convection took place throughout the entire mantle when Earth was new, but today, convection is limited to the upper mantle.
  - C. Mantle convection has ceased and the mantle is now a layer of uniform temperature and density.
  - D. Only the hottest part of the material ascending from the lower mantle rises past the 600 km boundary, so only part of the lower mantle mixes with the upper mantle.

**END OF TEST 4**





## Abbreviated ACT Test Answer Key

English Test	
Question	Answer
1	A
2	F
3	D
4	G
5	C
6	F
7	A
8	H
9	B
10	G
11	A
12	F
13	B
14	J
15	B

Mathematics Test	
Question	Answer
1	C
2	J
3	C
4	J
5	D
6	J
7	C
8	F
9	C
10	J
11	E
12	F
13	B
14	G
15	E

Reading Test	
Question	Answer
1	B
2	G
3	B
4	J
5	D
6	J
7	A
8	H
9	C
10	J

Science Test	
Question	Answer
1	A
2	F
3	C
4	J
5	A
6	G
7	A
8	G
9	C
10	J
11	D