

## SECTION IV

Time—35 minutes

25 Questions

**Directions:** The questions in this section are based on the reasoning contained in brief statements or passages. For some questions, more than one of the choices could conceivably answer the question. However, you are to choose the best answer; that is, the response that most accurately and completely answers the question. You should not make assumptions that are by commonsense standards implausible, superfluous, or incompatible with the passage. After you have chosen the best answer, blacken the corresponding space on your answer sheet.

1. In a yearlong study, half of the participants were given a simple kit to use at home for measuring the cholesterol level of their blood. They reduced their cholesterol levels on average 15 percent more than did participants without the kit. Participants were selected at random from among people with dangerously high cholesterol levels.

Which one of the following, if true, most helps to explain the study's finding?

- (A) The lower a blood-cholesterol level is, the less accurate are measurements made by the kit.
- (B) Participants with the kit were more likely to avoid foods that lower cholesterol level.
- (C) Participants with the kit used it more frequently during the first two months of the study.
- (D) All the participants in the study showed some lowering of cholesterol levels, the most striking decreases having been achieved in the first three months.
- (E) Participants using the kit reported that each reading reinforced their efforts to reduce their cholesterol levels.

2. You should not praise an act of apparent generosity unless you believe it is actually performed out of selfless motives, and you should not condemn an act of apparent selfishness unless you believe it is actually performed out of self-centered motives.

Which one of the following judgments conforms to the principle stated above?

- (A) Caroline rightly blamed her coworker Monica for failing to assist her in doing a time-consuming project, even though she knew that Monica had offered to help in the project earlier but that her offer had been vetoed by their supervisor.
- (B) It was correct for Sarah not to praise Michael for being charitable when he told her that he donates a tenth of his income to charity, since she guessed that he only told that fact in order to impress her.
- (C) Enrich justifiably excused his friend William for failing to write or phone after William moved out of town because he realized that William never makes an effort to keep in contact with any of his friends.
- (D) Daniel was right not to praise Margaret for offering to share her house with a visiting French family, since he believed that she made the offer only because she hoped it would be reciprocated by an invitation to use the family's apartment in Paris.
- (E) Albert correctly criticized Louise for adopting an abandoned dog because he believed that, although she felt sorry for the dog, she did not have sufficient time or space to care for it adequately.

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3. The government recently released a study of drinking water, in which it was reported that consumers who bought bottled water were in many cases getting water that was less safe than what they could obtain much more cheaply from the public water supply. In spite of the enormous publicity that the study received, sales of bottled water have continued to rise.

Which one of the following, if true, is most helpful in resolving the apparent paradox?

- (A) Bottled water might contain levels of potentially harmful contaminants that are not allowed in drinking water.
  - (B) Most consumers who habitually drink the bottled water discussed in the study cannot differentiate between the taste of their usual brand of bottled water and that of water from public sources.
  - (C) Increased consumption of the five best-selling brands of bottled water, which the report said were safer than both public water and most other brands of bottled water, accounted for the increase in sales.
  - (D) The rate of increase in the sales of bottled water has slowed since the publication of the government study.
  - (E) Government health warnings concerning food have become so frequent that consumers have begun to doubt the safety of many everyday foods.
4. Many economically useful raw materials are nonrenewable and in limited supply on Earth. Therefore, unless those materials can be obtained somewhere other than Earth, people will eventually be unable to accomplish what they now accomplish using those materials.

Which one of the following, if true, most seriously weakens the argument?

- (A) Some economically useful resources are renewable.
- (B) It is extremely difficult to get raw materials from outer space.
- (C) Functionally equivalent renewable substitutes could be found for nonrenewable resources that are in limited supply.
- (D) What is accomplished now using nonrenewable resources is sometimes not worth accomplishing.
- (E) It will be a few hundred years before the Earth is depleted of certain nonrenewable resources that are in limited supply.

5. Only some strains of the tobacco plant are naturally resistant to tobacco mosaic virus, never becoming diseased even when infected. When resistant strains were experimentally infected with the virus, levels of naturally occurring salicylic acid in these plants increased fivefold; no such increase occurred in the nonresistant plants. In a second experiment, 50 nonresistant tobacco plants were exposed to tobacco mosaic virus, and 25 of them were injected with salicylic acid. None of these 25 plants showed signs of infection; however, the other 25 plants succumbed to the disease.

Which one of the following conclusions is most strongly supported by the results of the experiments?

- (A) Tobacco plants that have become diseased by infection with tobacco mosaic virus can be cured by injecting them with salicylic acid.
- (B) Producing salicylic acid is at least part of the mechanism by which some tobacco plants naturally resist the disease caused by tobacco mosaic virus.
- (C) Salicylic acid is not produced in strains of tobacco plants that are not resistant to tobacco mosaic virus.
- (D) It is possible to test an uninfected tobacco plant for resistance to tobacco mosaic virus by measuring the level of salicylic acid it contains.
- (E) The production of salicylic acid in certain strains of tobacco plants can be increased and thus the strains made resistant to tobacco mosaic virus.

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## Questions 6–7

The number of hospital emergency room visits by heroin users grew by more than 25 percent during the 1980s. Clearly, then, the use of heroin rose in that decade.

6. Which one of the following, if true, would account for the statistic above without supporting the author's conclusion?
- (A) Widespread use of automatic weapons in the drug trade during the 1980s raised the incidence of physical injury to heroin users.
  - (B) The introduction of a smokable type of heroin during the 1980s removed the need for heroin to be injected intravenously and thus reduced the users' risk of infection.
  - (C) Many hospital emergency rooms were barely able to accommodate the dramatic increase in the number of medical emergencies related to drug abuse during the 1980s.
  - (D) Heroin use increased much more than is reflected in the rate of heroin-linked hospital emergency room visits.
  - (E) Viral and bacterial infections, malnourishment, and overdoses account for most hospital emergency room visits linked to heroin.
7. The author's conclusion is properly drawn if which one of the following is assumed?
- (A) Those who seek medical care because of heroin use usually do so in the later stages of addiction.
  - (B) Many heroin users visit hospital emergency rooms repeatedly.
  - (C) The number of visits to hospital emergency rooms by heroin users is proportional to the incidence of heroin usage.
  - (D) The methods of using heroin have changed since 1980, and the new methods are less hazardous.
  - (E) Users of heroin identify themselves as such when they come to hospital emergency rooms.

8. The years 1917, 1937, 1956, 1968, 1979, and 1990 are all notable for the occurrence of both popular uprisings and near-maximum sunspot activity. During heavy sunspot activity, there is a sharp rise in positively charged ions in the air people breathe, and positively charged ions are known to make people anxious and irritable. Therefore, it is likely that sunspot activity has actually been a factor in triggering popular uprisings.

Which one of the following exhibits a pattern of reasoning most similar to that in the passage?

- (A) The ancient Greeks sometimes attempted to predict the outcome of future events by watching the flight patterns of birds. Since the events themselves often matched the predictions, the birds were probably responding to some factor that also influenced the events.
- (B) Martha, Sidney, and Hilary are the city's three most powerful politicians, and all three graduated from Ridgeview High School. Although Ridgeview never had a reputation for excellence, it must have been a good school to have produced three such successful graduates.
- (C) Unusually cold weather last December coincided with a rise in fuel prices. When it is cold, people use more fuel to keep warm; and when more fuel is used, prices rise. Therefore if prices are high next winter, it will be the result of cold weather.
- (D) The thirty healthiest people in a long-term medical study turned out to be the same thirty whose regular diets included the most vegetables. Since specific substances in vegetables are known to help the body fight disease, vegetables should be part of everyone's diet.
- (E) Acme's most productive managers are consistently those who occupy the corner offices, which have more windows than other offices at Acme. Since people are more alert when they are exposed to abundant natural light, the greater productivity of these managers is probably at least in part a result of their working in the corner offices.

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9. Since anyone who supports the new tax plan has no chance of being elected, and anyone who truly understands economics would not support the tax plan, only someone who truly understands economics would have any chance of being elected.

The reasoning in the argument is flawed because the argument ignores the possibility that some people who

- (A) truly understand economics do not support the tax plan
- (B) truly understand economics have no chance of being elected
- (C) do not support the tax plan have no chance of being elected
- (D) do not support the tax plan do not truly understand economics
- (E) have no chance of being elected do not truly understand economics

10. Interviewer: You have shown that biofeedback, dietary changes, and adoption of proper sleep habits all succeed in curing insomnia. You go so far as to claim that, with rigorous adherence to the proper treatment, any case of insomnia is curable. Yet in fact some patients suffering from insomnia do not respond to treatment.

Therapist: If patients do not respond to treatment, this just shows that they are not rigorous in adhering to their treatment.

The therapist's reply to the interviewer is most vulnerable to which one of the following criticisms?

- (A) It precludes the possibility of disconfirming evidence.
- (B) It depends on the ambiguous use of the term "treatment."
- (C) It fails to acknowledge that there may be different causes for different cases of insomnia.
- (D) It does not provide statistical evidence to back up its claim.
- (E) It overlooks the possibility that some cases of insomnia might improve without any treatment.

#### Questions 11–12

**Conservative:** Socialists begin their arguments with an analysis of history, from which they claim to derive certain trends leading inevitably to a socialist future. But in the day-to-day progress of history there are never such discernible trends. Only in retrospect does inevitability appear, for history occurs through accident, contingency, and individual struggle.

**Socialist:** If we thought the outcome of history were inevitable, we would not work so hard to transform the institutions of capitalist society. But to transform them we must first understand them, and we can only understand them by an analysis of their history. This is why historical analysis is important in socialist argument.

11. In the dispute the issue between the socialist and the conservative can most accurately be described as whether
- (A) a socialist society is the inevitable consequence of historical trends that can be identified by an analysis of history
  - (B) the institutions of capitalist society stand in need of transformation
  - (C) socialists' arguments for the inevitability of socialism are justified
  - (D) it is possible for people by their own efforts to affect the course of history
  - (E) socialists analyze history in order to support the view that socialism is inevitable
12. The socialist's statements imply a conflict with the conservative's view of history if the conservative also holds that
- (A) it would have been impossible for anyone to predict a significant period beforehand that the institutions of capitalist society would take the form that they actually took
  - (B) the apparent inevitability of historical change is deceptive; all historical events could have occurred otherwise than they actually did
  - (C) in the past, radical changes in social structures have mostly resulted in a deterioration of social conditions
  - (D) since socialism cannot arise by accident or contingency, it can only arise as a result of individual struggle
  - (E) because historical changes are mostly accidental, it is impossible for people to direct their efforts sensibly toward achieving large-scale changes in social conditions

13. “Addiction” has been defined as “dependence on and abuse of a psychoactive substance.” Dependence and abuse do not always go hand in hand, however. For example, cancer patients can become dependent on morphine to relieve their pain, but this is not abusing the drug. Correspondingly, a person can abuse a drug without being dependent on it. Therefore, the definition of “addiction” is incorrect.

The relevance of the example of cancer patients to the argument depends on the assumption that

- (A) cancer patients never abuse morphine
  - (B) cancer patients often become dependent on morphine
  - (C) cancer patients who are dependent on morphine are addicted to it
  - (D) cancer patients who abuse a drug are dependent on it
  - (E) cancer patients cannot depend on morphine without abusing it
14. The commissioner has announced that Judge Khalid, who was on the seven-member panel appointed to resolve the Amlec labor dispute, will have sole responsibility for resolving the Simdon labor dispute. Since in its decision the Amlec panel showed itself both reasonable and fair, the two sides in the Simdon dispute are undoubtedly justified in the confidence they have expressed in the reasonableness and fairness of the arbitrator assigned to their case.

Which one of the following contains flawed reasoning most parallel to that contained in the passage?

- (A) Representing the school board, Marcia Barthes presented to the school’s principal a list of recently elected school board members. Since only an elected member of the school board can act as its representative, Ms. Barthes’s name undoubtedly appears on that list.
- (B) Alan Caldalf, who likes being around young children, has decided to become a pediatrician. Since the one characteristic common to all good pediatricians is that they like young children, Mr. Caldalf will undoubtedly be a very good pediatrician.
- (C) Jorge Diaz is a teacher at a music school nationally known for the excellence of its conducting faculty. Since Mr. Diaz has recently been commended for the excellence of his teaching, he is undoubtedly a member of the school’s conducting faculty.
- (D) Ula Borg, who has sold real estate for Arcande Realty for many years, undoubtedly sold fewer houses last year than she had the year before since the number of houses sold last year by Arcande Realty is far lower than the number sold the previous year.
- (E) The members of the local historical society unanimously support designating the First National Bank building a historical landmark. Since Evelyn George is a member of that society, she undoubtedly favors according landmark status to the city hall as well.

15. Magazine article: The Environmental Commissioner’s new proposals are called “Fresh Thinking on the Environment,” and a nationwide debate on them has been announced. Well, “fresh thinking” from such an unlikely source as the commissioner does deserve closer inspection. Unfortunately we discovered that these proposals are virtually identical to those issued three months ago by Tsarque Inc. under the heading “New Environmentalism” (Tsarque Inc.’s chief is a close friend of the commissioner). Since Tsarque Inc.’s polluting has marked it as an environmental nightmare, in our opinion the “nationwide debate” can end here.

A flaw in the magazine article’s reasoning is that it

- (A) assumes without any justification that since two texts are similar one of them must be influenced by the other
  - (B) gives a distorted version of the commissioner’s proposals and then attacks this distorted version
  - (C) dismisses the proposals because of their source rather than because of their substance
  - (D) uses emotive language in labeling the proposals
  - (E) appeals to the authority of Tsarque Inc.’s chief without giving evidence that this person’s opinion should carry special weight
16. It is not reasonable to search out “organic” foods—those grown without the application of synthetic chemicals—as the only natural foods. A plant will take up the molecules it needs from the soil and turn them into the same natural compounds, whether or not those molecules come from chemicals applied to the soil. All compounds made by plants are part of nature, so all are equally natural.
- The argument proceeds by
- (A) redefining a term in a way that is favorable to the argument
  - (B) giving a reason why a recommended course of action would be beneficial
  - (C) appealing to the authority of scientific methods
  - (D) showing that a necessary condition for correctly applying the term “organic” is not satisfied
  - (E) reinterpreting evidence presented as supporting the position being rejected

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17. On completing both the course in experimental design and the developmental psychology course, Angela will have earned a degree in psychology. Since experimental design, which must be completed before taking developmental psychology, will not be offered until next term, it will be at least two terms before Angela gets her psychology degree.

If the statements above are all true, which one of the following must also be true?

- (A) The developmental psychology course Angela needs to take requires two terms to complete.
  - (B) The course in experimental design is an easier course than the course in developmental psychology.
  - (C) There are no prerequisites for the course in experimental design.
  - (D) Anyone who earns a degree in psychology from the university Angela attends will have completed the course in experimental design.
  - (E) Once Angela completes the developmental psychology course, she will have earned a degree in psychology.
18. According to a government official involved in overseeing airplane safety during the last year, over 75 percent of the voice-recorder tapes taken from small airplanes involved in relatively minor accidents record the whistling of the pilot during the fifteen minutes immediately preceding the accident. Even such minor accidents pose some safety risk. Therefore, if passengers hear the pilot start to whistle they should take safety precautions, whether instructed by the pilot to do so or not.

The argument is most vulnerable to criticism on the grounds that it

- (A) accepts the reliability of the cited statistics on the authority of an unidentified government official
- (B) ignores the fact that in nearly one-quarter of these accidents following the recommendation would not have improved passengers' safety
- (C) does not indicate the criteria by which an accident is classified as "relatively minor"
- (D) provides no information about the percentage of all small airplane flights during which the pilot whistles at some time during that flight
- (E) fails to specify the percentage of all small airplane flights that involve relatively minor accidents

19. When permits for the discharge of chemicals into a waterway are issued, they are issued in terms of the number of pounds of each chemical that can be discharged into the waterway per day. These figures, calculated separately for each chemical for which a permit is issued, are based on an estimate of the effect of the dilution of the chemical by the amount of water flowing through the waterway. The waterway is therefore protected against being adversely affected by chemicals discharged under the permits.

The argument depends on the assumption that

- (A) relatively harmless chemicals do not interact with each other in the water to form harmful compounds
- (B) there is a swift flow of water in the waterway that ensures rapid dispersion of chemicals discharged
- (C) there are no chemicals for which discharge into waterways is entirely prohibited
- (D) those who receive the permits do not always discharge the entire quantity of chemicals that the permits allow
- (E) the danger of chemical pollution of waterways is to be evaluated in terms of human health only and not in terms of the health of both human beings and wildlife

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## Questions 20–21

Monroe, despite his generally poor appetite thoroughly enjoyed the three meals he ate at the Tip-Top Restaurant, but, unfortunately, after each meal he became ill. The first time he ate an extra-large sausage pizza with a side order of hot peppers; the second time he took full advantage of the all-you-can-eat fried shrimp and hot peppers special; and the third time he had two of Tip-Top's giant meatball sandwiches with hot peppers. Since the only food all three meals had in common was the hot peppers, Monroe concludes that it is solely due to Tip-Top's hot peppers that he became ill.

20. Monroe's reasoning is most vulnerable to which one of the following criticisms?
- (A) He draws his conclusion on the basis of too few meals that were consumed at Tip-Top and that included hot peppers.
  - (B) He posits a causal relationship without ascertaining that the presumed cause preceded the presumed effect.
  - (C) He allows his desire to continue dining at Tip-Top to bias his conclusion.
  - (D) He fails to establish that everyone who ate Tip-Top's hot peppers became ill.
  - (E) He overlooks the fact that at all three meals he consumed what was, for him, an unusually large quantity of food.
21. If both Monroe's conclusion and the evidence on which he bases it are correct, they would provide the strongest support for which one of the following?
- (A) Monroe can eat any of Tip-Top's daily all-you-can-eat specials without becoming ill as long as the special does not include the hot peppers.
  - (B) If, at his third meal at Tip-Top, Monroe had chosen to eat the baked chicken with hot peppers, he would have become ill after that meal.
  - (C) If the next time Monroe eats one of Tip-Top's extra-large sausage pizzas he does not have a side order of hot peppers, he will not become ill after his meal.
  - (D) Before eating Tip-Top's fried shrimp with hot peppers special, Monroe had eaten fried shrimp without suffering any ill effects.
  - (E) The only place Monroe has eaten hot peppers has been at Tip-Top.

22. "This company will not be training any more pilots in the foreseeable future, since we have 400 trained pilots on our waiting list who are seeking employment. The other five major companies each have roughly the same number of trained pilots on their waiting lists, and since the projected requirement of each company is for not many more than 100 additional pilots, there will be no shortage of personnel despite the current upswing in the aviation industry."

Which one of the following, if true, casts the most doubt on the accuracy of the above conclusion?

- (A) Most of the trained pilots who are on a waiting list for a job are on the waiting lists of all the major companies.
  - (B) In the long run, pilot training will become necessary to compensate for ordinary attention.
  - (C) If no new pilots are trained, there will be an age imbalance in the pilot work force.
  - (D) The quoted personnel projections take account of the current upswing in the aviation industry.
  - (E) Some of the other major companies are still training pilots but with no presumption of subsequent employment.
23. A car's antitheft alarm that sounds in the middle of the night in a crowded city neighborhood may stop an attempted car theft. On the other hand, the alarm might signal only a fault in the device, or a response to some harmless contact, such as a tree branch brushing the car. But whatever the cause, the sleep of many people in the neighborhood is disturbed. Out of consideration for others, people who have these antitheft alarms on their cars should deactivate them when they park in crowded city neighborhoods at night.
- Which one of the following, if assumed by the author of the passage, would allow her properly to draw her conclusion that the owners of alarm-equipped cars should deactivate the alarms when parking in crowded city neighborhoods at night?
- (A) The inconvenience of false alarms is a small price to pay for the security of a neighborhood.
  - (B) In most cases when a car alarm sounds at night, it is a false alarm.
  - (C) Allowing the residents of a crowded city neighborhood to sleep undisturbed is more important than preventing car theft.
  - (D) People who equip their cars with antitheft alarms are generally inconsiderate of others.
  - (E) The sounding of car antitheft alarms during the daytime does not disturb the residents of crowded city neighborhoods.

Questions 24–25

In Peru, ancient disturbances in the dark surface material of a desert show up as light-colored lines that are the width of a footpath and stretch for long distances. One group of lines branching out like rays from a single point crosses over curved lines that form a very large bird figure. Interpreting the lines in the desert as landing strips for spaceship-traveling aliens, an investigator argues that they could hardly have been Inca roads, asking, “What use to the Inca would have been closely spaced roads that ran parallel? That intersected in a sunburst pattern? That came abruptly to an end in the middle of an uninhabited plain?”

24. The argumentative strategy of the investigator quoted is to
- (A) reject out of hand direct counterevidence to the investigator’s own interpretation
  - (B) introduce evidence newly discovered by the investigator which discredits the alternative interpretation
  - (C) support one interpretation by calling into question the plausibility of the alternative interpretation
  - (D) challenge the investigative methods used by those who developed the alternative interpretation
  - (E) show that the two competing interpretations can be reconciled with one another

25. For someone who interprets the lines as referring to astronomical phenomena, which one of the following, if true, most effectively counters an objection that the crossing of the straight-line pattern over the bird figure shows that the two kinds of line pattern served unrelated purposes?

- (A) In areas that were inhabited by ancient native North American peoples, arrangements of stones have been found that mark places where sunlight falls precisely on the spring solstice, an astronomically determined date.
- (B) The straight lines are consistent with sight lines to points on the horizon where particular astronomical events could have been observed at certain plausible dates, and the figure could represent a constellation.
- (C) The straight-line pattern is part of a large connected complex of patterns of straight-line rays connecting certain points with one another.
- (D) Native Central American cultures, such as that of the Maya, left behind elaborate astronomical calendars that were engraved on rocks.
- (E) There is evidence that the bird figure was made well before the straight-line pattern.

S T O P

IF YOU FINISH BEFORE TIME IS CALLED, YOU MAY CHECK YOUR WORK ON THIS SECTION ONLY.  
DO NOT WORK ON ANY OTHER SECTION IN THE TEST.





DATE \_\_\_\_\_

## LSAT WRITING SAMPLE TOPIC

The economically depressed town of Sterling Falls has received a grant allowing it to provide a low-interest loan to fund one of the following development proposals. Assuming costs are roughly the same, write an argument supporting one proposal over the other based on the following criteria:

- The town wants to find a way to offset the unemployment caused by the recent closing of a nearby manufacturing plant.
- The town wants to preserve the integrity of its wildlife refuge area, which attracts thousands of migratory birds.

Lakeview Hotels proposes building a three-story hotel on the edge of the wildlife refuge. This wood and glass structure would be designed to fit into the natural environment with many of the 100 rooms having a view of the refuge's major lake. The hotel would also have a family restaurant and gift shop featuring work by area artisans. Lakeview wants to pave a one-lane road through parts of the refuge and provide several vans to take guests on guided tours. Lakeview promises to dedicate a substantial percentage of the hotel's profits toward maintenance of the refuge, whose upkeep costs have been rising steadily in recent years. Scientists familiar with the area have expressed concern that the traffic might cause many of the migratory birds to take refuge elsewhere.

Porterfield Associates, a family-owned development company prominent in the Sterling Falls area, proposes renovating the historical Sterling Hotel on the town's main street. A once-elegant structure, the building is currently a boardinghouse in need of repair. The renovated structure would have 30 rooms and a small gourmet restaurant. In support of this proposal, Bruce Alexander, a local philanthropist friendly with the Porterfield family, has offered to establish an educational center at the refuge. While the center would open with a staff of only twenty, Alexander believes that interest, along with external funding, would grow. Alexander will not fund the center if Lakeview's proposal is approved.

[illegible]

**DIRECTIONS:**

1. Use the Answer Key on the next page to check your answers.
2. Use the Scoring Worksheet below to compute your Raw Score.
3. Use the Score Conversion Chart to convert your Raw Score into the 120-180 scale.

**SCORING WORKSHEET**

1. Enter the number of questions you answered correctly in each section

NUMBER  
CORRECT

SECTION I..... \_\_\_\_\_

SECTION II..... \_\_\_\_\_

SECTION III..... \_\_\_\_\_

SECTION IV..... \_\_\_\_\_

2. Enter the sum here: \_\_\_\_\_ **THIS IS YOUR  
RAW SCORE.**

**CONVERSION CHART**

**For converting Raw Score to the 120-180 LSAT Scaled Score  
LSAT Prep Test XIV**

<u>REPORTED SCORE</u>	<u>LOWEST RAW SCORE</u>	<u>HIGHEST RAW SCORE</u>
180	100	101
179	99	99
178	98	98
177	97	97
176	—*	—*
175	96	96
174	95	95
173	94	94
172	93	93
171	92	92
170	91	91
169	90	90
168	88	89
167	87	87
166	85	86
165	84	84
164	82	83
163	81	81
162	79	80
161	77	78
160	75	76
159	74	74
158	72	73
157	70	71
156	68	69
155	66	67
154	65	65
153	63	64
152	61	62
151	59	60
150	57	58
149	56	56
148	54	55
147	52	53
146	50	51
145	48	49
144	47	47
143	45	46
142	43	44
141	41	42
140	40	40
139	38	39
138	36	37
137	35	35
136	33	34
135	31	32
134	30	30
133	29	29
132	27	28
131	26	26
130	25	25
129	24	24
128	23	23
127	22	22
126	21	21
125	20	20
124	19	19
123	18	18
122	—*	—*
121	17	17
120	0	16