

Critical Reasoning

Directions

Analyze the information on which each question is based, and then choose the most appropriate of the answer choices.

1. If Ruth was born in New York State, then she is a citizen of the United States.

The statement above can be deduced from which of the following statements?

- A) Everyone born in New York State is a citizen of the United States.
- B) Every citizen of the United States is resident either of one of the states or of one of the territories.
- C) Some people born in New York State are citizens of the United States.
- D) Ruth was born either in New York or in California.
- E) Ruth is a citizen either of the United States or of Sweden.
2. Therapists find that treatment of those people who seek help because they are unable to stop smoking or overeating is rarely successful. From these experiences, therapists have concluded that such habits are intractable and that success in breaking them is rare.
As survey show, millions of people have dropped the habit of smoking, and many people have successfully managed a substantially weight loss.
If all of the statements above are correct, an explanation that resolves their apparent contradiction is provided by the hypothesis that
- A) There have been some success in therapy, and those successes were counted in the surveys
- B) It is easier to stop smoking than it is to stop overeating
- C) It is easy to break the habits of smoking and overeating by exercising willpower
- D) The group of people selected for the surveys did not include those who failed to break their habits even after therapy
- E) Those who succeed in curing themselves do not go for treatment and so are not included in the therapists' data
3. The greatest chance for the existence of extraterrestrial life is on a planet beyond our solar system. After all, the Milky way galaxy alone contains 100 billion other suns, many of which could be accompanied by planets similar enough to Earth to make them suitable abodes of life.
The argument above assumes which of the following?
- A) Living creatures on another planet would probably have the same appearance as those on Earth.

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- B) Life cannot exist on other planets in our solar system.
- C) If the appropriate physical conditions exist, life is an inevitable consequence.
- D) More than one of the suns in the galaxy is accompanied by an Earth-like planet.
- E) It is likely that life on another planet would require conditions similar to those on Earth.
4. Proportionally, more persons diagnosed as having the brain disorder schizophrenia were born in the winter months than at any other time of year. A recent study suggests that the cause may have been the nutrient-poor diets of some expectant mothers during the coldest months of the year, when it was hardest for people to get, or afford, a variety of fresh foods.
- Which of the following, if true, helps to support the conclusion presented above?
- A) Over the years the number of cases of schizophrenia has not shown a correlation with degree of economic distress.
- B) Most of the development of brain areas affected in schizophrenia occurs during the last month of the mother's pregnancy.
- C) Suicide rates are significantly higher in winter than in any other seasons.
- D) The nutrients in fresh foods have the same effects on the development of the brain as do the nutrients in persevered foods
- E) A sizable proportion of the patients involved in the study have a history of schizophrenia to family.
5. Since the mayor's publicity campaign for Greenville's bus service began six months ago, morning automobile traffic into the midtown area of the city has decreased seven percent. During the same period, there has been an equivalent rise in the number of persons riding buses into the midtown area. Obviously, the mayor's publicity campaign has convinced many people to leave their cars at home and ride the bus to work.
- Which of the following, if true casts the most serious doubt on the conclusion drawn above?
- A) Fares for all bus routes in Greenville have risen an average of five percent during the past six months.
- B) The mayor of Greenville rides the bus to City Hall in the city's midtown area.
- C) Road reconstruction has greatly reduced the number of lanes available to commuters in major streets leading to the midtown area during the past six months.
- D) The number of buses entering the midtown area of Greenville during the morning hours is exactly the same now as it was one year ago.

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- E) Surveys show that longtime bus riders are no more satisfied with the Greenville bus service than they were before the mayor's publicity campaign began.
6. In the aftermath of a worldwide stock-market crash, Country T claimed that the severity of the stock-market crash it experienced resulted from the accelerated process of denationalization many of its industries underwent shortly before the crash.
Which of the following, if it could be carried out, would be most useful in an evaluation of Country T's assessment of the causes of the severity of its stock-market crash?
- A) Calculating the average loss experienced by individual traders in Country T during the crash
- B) Using economic theory to predict the most likely date of the next crash in Country T
- C) Comparing the total number of shares sold during the worst days of the crash in Country T to the total number of shares sold in Country T just prior to the crash
- D) Comparing the severity of the crash in Country T to the severity of the crash in countries otherwise economically similar to Country T that have not experienced recent denationalization
- E) Comparing the long-term effects of the crash on the purchasing power of the currency of Country T to the immediate, more severe short-term effects of the crash on the purchasing power of the currency of Country T
7. Some people have questioned the judge's objectivity in cases of sex discrimination against women. But the record shows that in sixty percent of such cases, the judge has decided in favor of the women. This record demonstrates that the judge has not discriminated against women in cases of sex discrimination against women.
The argument above is flawed in that it ignores the possibility that
- A) A large number of the judge's cases arose out of allegations of sex discrimination against women
- B) Many judges find it difficult to be objective in cases of sex discrimination against women
- C) The judge is biased against women defendants or plaintiffs in cases that do not involve sex discrimination
- D) The majority of the cases of sex discrimination against women that have reached the judge's court have been appealed from a lower court
- E) The evidence shows that the women should have won in more than sixty percent of the judge's cases involving sex discrimination against women

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8. Opponents of laws that require automobile drivers and passengers to wear seat belts argue that in a free society people have the right to take risks as long as the people do not harm others as a result of taking the risks. As a result, they conclude that it should be each person's decision whether or not to wear a seat belt. Which of the following, if true, most seriously weakens the conclusion drawn above?
- A) Many new cars are built with seat belts that automatically fasten when someone sits in the front seat
 - B) Automobile insurance rates for all automobile owners are higher because of the need to pay for the increased injuries or deaths of people not wearing seat belts
 - C) Passengers in airplanes are required to wear seat belts during takeoffs and landings
 - D) The rate of automobile fatalities in states that do not have mandatory seat-belt laws is greater than the rate of fatalities in states that do have such laws
 - E) In automobile accidents, a greater number of passengers who do not wear seat belts are injured than are passengers who do wear seat belts
9. Biological functions of many plants and animals vary in cycles that are repeated every 24 hours. It is tempting to suppose that alteration in the intensity of incident light is the stimulus that controls these daily biological rhythms. But there is much evidence to contradict this hypothesis. Which of the following, if known, is evidence that contradicts the hypothesis stated in lines 2-5 above?
- A. Human body temperature varies throughout the day, with the maximum occurring in the late afternoon and the minimum in the morning
 - B. While some animals, such as the robin, are more active during the day, others, such as mice, show greater activity at night
 - C. When people move from one time zone to another, their daily biological rhythms adjust in a matter of days to the periods of sunlight and darkness in the new zone
 - D. Certain single-cell plants display daily biological rhythms even when the part of the cell containing the nucleus is removed
 - E. Even when exposed to constant light intensity around the clock, some algae display rates of photosynthesis that are much greater during daylight hours than at night
10. Although migraine headaches are believed to be caused by food allergies, putting patients on diets that eliminate those foods to which the patients have been demonstrated to have allergic migraine reactions frequently does not stop headaches. Obviously, some other cause of migraine headaches besides food allergies must exist. Which of the following, if true, would most weaken the conclusion above?
- A. Many common foods elicit an allergic response only after several days, making it very difficult to observe links between specific foods patients eat and headaches they develop
 - B. Food allergies affect many people who never develop the symptom of migraine headaches
 - C. Many patients report that the foods that cause them migraine headaches are among the foods that they most enjoy eating
 - D. Very few patients have allergic migraine reactions as children and then have migraine-free adult lives

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- once they have eliminated from their diets foods to which they have been demonstrated to be allergic
- E. Very rarely do food allergies cause patients to suffer a symptom more severe than that of migraine headaches
11. The technological conservatism of bicycle manufacturers is a reflection of the kinds of demand they are trying to meet. The only cyclists seriously interested in innovation and willing to pay for it are bicycle racers. Therefore, innovation in bicycle technology is limited by what authorities will accept as standard for purposes of competition in bicycle races. Which of the following is an assumption made in drawing the conclusion above?
- A. The market for cheap, traditional bicycles cannot expand unless the market for high-performance competition bicycles expands
- B. High-performance bicycles are likely to be improved more as a result of technological innovations developed in small workshops than as a result of technological innovations developed in major manufacturing concerns
- C. Bicycle racers do not generate a strong demand for innovations that fall outside what is officially recognized as standard for purposes of competition
- D. The technological conservatism of bicycle manufacturers results primarily from their desire to manufacture a product that can be sold without being altered to suit different national markets
- E. The authorities who set standards for high-performance bicycle racing do not keep informed about innovative bicycle design.
12. Spending on research and development by United states businesses for 1984 showed an increase of about 8 percent over the 1983 level. This increase actually continued a downward trend evident since 1981-when outlays for research and development increased 16.4 percent over 1980 spending. Clearly the 25 percent tax credit enacted by Congress in 1981, which was intended to promote spending on research and development, did little or nothing to stimulate such spending. The conclusion of the argument above cannot be true unless which of the following is true?
- A. Business spending on research and development is usually directly proportional to business profits
- B. Business spending for research and development in 1985 could not increase by more than 8.3%
- C. Had the 1981 tax credit been set higher than 25% business spending for research and development after 1981 would have increased more than it did
- D. In the absence of the 25% tax credit business spending for research and development after 1981 would not have been substantially lower than it was
- E. Tax credits marked for specific investments are rarely effective in inducing businesses to make those investments
13. Treatment for hypertension forestalls certain medical expenses by preventing strokes and heart disease. Yet any money so saved amounts to only one-fourth of the expenditures required to treat the hypertensive population. Therefore, there is no economic justification for preventive treatment for hypertension . which of the following, if true, is most damaging to the conclusion above?
- A. The many fatal strokes and heart attacks resulting from untreated hypertension cause insignificant medical expenditures but large economic losses of other sorts

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- B. The cost, per patient of preventive treatment for hypertension would remain constant even if such treatment were instituted on a large
- C. The matters of health care, economic considerations should ideally not be dominant
- D. Effective prevention presupposes early diagnosis and programs to ensure early diagnosis are costly
- E. The net savings in medical resource achieved by some preventive health measures are smaller than the net losses attributable to certain other measures of this kind
14. Property taxes are typically set at a rate per \$1,000 of officially assessed value. Reassessments should be frequent in order to remove distortions that arise when property values change at differential rates. In practice however reassessments typically occur when they benefit the government that is when their effect is to increase total tax revenue. If the statements above are true, which of the following describes a situation in which a reassessment should occur but is unlikely to do so?
- A. Property values have risen sharply and uniformly
- B. Property values have all risen –some very sharply, some less so
- C. Property values have for the most part risen sharply; yet some have dropped slightly
- D. Property values have for the most part dropped significantly; yet some have risen slightly
- E. Property values have dropped significantly and uniformly
15. The number of patents granted to inventors by the United States Patent office dropped from 56,000 in 1971 to 45,000 in 1978. Spending on research and development which peaked at 3 percent of the gross national product (GNP) in 1964, was only 2.2 percent of the GNP in 1978. During this period, when the United States percentage was steadily decreasing, West Germany and Japan increased the percentage of their GNP's spent on research and development to 3.2 percent and 1.6 percent, respectively. Which of the following conclusions is best supported by the information above?
- A. There is a direct relationship between the size of a nation's GNP and number of inventions it produces
- B. Japan and West Germany spent more money on research and development in 1978 than did the United States
- C. The amount of money a nation spends on research and development is directly related to the number of inventions patented in that nation
- D. Between 1964 and 1978 the United States consistently spent a larger percentage of its GNP on research and development than did Japan
- E. Both West Germany and Japan will soon surpass the United States in the number of patents granted to inventors
16. When three Everett-owned lightning-built airplanes crashed in the same month, the Everett company ordered three new lightning built airplanes as replacements. This decision surprised many in the airline industry because, ordinarily when a product is involved in accidents, users become reluctant to buy that product. Which of the following, if true provides the best indication that the Everett company's decision was logically well supported?
- A. Although during the previous year only one Lightning-built airplane crashed, competing manufacturers had a perfect safety record
- B. The Lightning-built airplanes crashed due to pilot error, but because of the excellent quality of the

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- planes there were many survivors
- C. The Federal Aviation Association issued new guidelines for airlines in order to standardize safety requirements governing preflight inspections
- D. Consumer advocates pressured two major airlines into purchasing safer airplanes so that the public would be safer while flying
- E. Many Lightning Airplane company employees had to be replaced because they found jobs with the competition
17. Recently a court ruled that current law allows companies to reject a job applicant if working in the job would entail a 90 percent that the applicant would suffer a heart attack. The presiding judge justified the ruling saying that it protected both employees and employers. The use of this court ruling as part of the law could not be effective in regulating employment practices if which of the following were true?
- A. The best interests of employers often conflict with the interests of employees
- B. No legally accepted methods exist for calculating the risk of a job applicant's having a heart attack as a result of being employed in any particular occupation
- C. Some jobs might involve health risks other than the risk of heart attack
- D. Employees who have a 90 percent chance of suffering a heart attack may be unaware that their risk is so great
- E. The number of people applying for jobs at a company might decline if the company, by screening applicants for risk of heart attack, seemed to suggest that the job entailed high risk of heart attack
18. Robot satellites relay important communications and identify weather patterns. Because the satellites can be repaired only in orbit, astronauts are needed to repair them. Without repairs, the satellites would eventually malfunction. Therefore, space flights carrying astronauts must continue. Which of the following, if true, would most seriously weaken the argument above?
- A. Satellites falling from orbit because of malfunctions burn up in the atmosphere
- B. Although satellites are indispensable in the identification of weather patterns, weather forecasters also make some use of computer projections to identify weather patterns
- C. The government, responding to public pressure, has decided to cut the budget for space flights and put more money into social welfare programs
- D. Repair of satellites requires heavy equipment, which adds to the amount of fuel needed to lift a spaceship carrying astronauts into orbit
- E. Technical obsolescence of robot satellites makes repairing them more costly and less practical than sending new, improved satellites into orbit
19. Advocates of a large scale space defense research project conclude that it will represent a net benefit to civilian business. They say that since government sponsored research will have civilian applications, civilian businesses will reap the rewards of government developed technology. Each of the following, if true, raises a consideration arguing against the conclusion above, EXCEPT:
- A. The development of cost-efficient manufacturing techniques is of the highest priority for civilian business and would be neglected if resources go to military projects, which do not emphasize cost efficiency

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- B. Scientific and engineering talent needed by civilian business will be absorbed by the large scale project
 - C. Many civilian businesses will receive subcontracts to provide materials and products needed by the research project
 - D. If government research money is devoted to the space project, it will not be available for specifically targeted needs of civilian business, where it could be more efficiently used
 - E. The increase in taxes or government debt needed to finance the project will severely reduce the vitality of the civilian economy
20. In an attempt to promote the widespread use of paper rather than plastic, and thus reduce non-biodegradable waste, the council of a small town plans to ban the sale of disposable plastic goods for which substitutes made of paper is exist. The council argues that since most paper is entirely biodegradable, paper goods are environmentally preferable. Which of the following, if true, indicates that the plan to ban the sale of disposable plastic goods is ill suited to the town council’s environmental goals?
- A. Although biodegradable plastic goods are now available, members of the town council believe biodegradable paper goods to be safer for the environment
 - B. The paper factory at which most of the towns people are employed plans to increase production of biodegradable paper goods
 - C. After other towns enacted similar bans on the sale of plastic goods, the environmental benefits were not discernible for several years
 - D. Since most townspeople prefer plastic goods to paper goods in many instances, they are likely to purchase them in neighboring towns where plastic goods are available for sale
 - E. Products other than those derived from wood pulp are often used in the manufacture of paper goods that are entirely biodegradable

ANSWERS

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|-----|---|-----|---|-----|---|-----|---|
| 1. | E | 2. | E | 3. | B | 4. | A |
| 5. | C | 6. | D | 7. | E | 8. | B |
| 9. | E | 10. | A | 11. | C | 12. | D |
| 13. | A | 14. | D | 15. | D | 16. | B |
| 17. | B | 18. | E | 19. | C | 20. | D |