

Verbal Analysis/Evaluating
Conclusions in the Light
of Known Facts

Booklet No. 14

Booklet #14

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The CSEA Examination Preparation Booklet Series is designed to help members prepare for New York State and local government civil service examinations. This booklet is designed for practice purposes only and its content may not conform to that of any particular civil service examination.

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VERBAL ANALYSIS/EVALUATING CONCLUSIONS IN THE LIGHT OF KNOWN FACTS

There are usually two parts to this section, "Understanding and Interpreting Written Material" and "Evaluating Conclusions in the Light of Known Facts." Many exam candidates have traditionally had a difficult time with both of these subjects. It's critical to read these questions very carefully, and to assume nothing other than what you've been given in the passage. We suggest that you do no more than three of these questions at a time, looking up the answers and explanations in the back of the book-let after you've completed each set of three. We also suggest you use the Diagnostic Worksheet on the next page to analyze any questions you may have answered incorrectly.

There are usually 15 questions in each of these two sections of the Verbal Analysis portion of the actual exam, or 30 questions in all. Of these, a few of the questions will be very difficult, a few very easy, and the rest in between. In the "evaluating conclusions" section of this booklet, we've given you a greater proportion of very difficult questions than you would find on the exam. We've done this to give you extra practice in answering tough questions, so please don't get discouraged. A few of the reading comprehension questions are also a little longer than you would get on the actual exam. We've done this to help increase concentration and endurance. One of the biggest problems many exam candidates have is a loss of concentration and energy during the exam. Practicing is a good way to help eliminate this problem. We've provided 40 questions for you to practice with. If you find that you didn't do as well on the questions in our reading comprehension section as you would have liked, we highly recommend that you work with booklets 4 and 13 of this series, Understanding and Interpreting Written Material and Understanding and Interpreting Written Material II, respectively.

Good Luck!

UNDERSTANDING AND INTERPRETING WRITTEN MATERIAL

For each of the following questions, select the letter that represents the best of the four possible answers.

1. The National Assessment of Educational Progress recently released the results of the first statistically valid national sampling of young adult reading skills in the U.S. According to the survey, ninety-five percent of U.S. young adults (aged 21-25) can read at a fourth-grade level or better. This means they can read well enough to apply for a job, understand a movie guide or join the Army. This is a higher literacy rate than the eighty to eighty-five percent usually estimated for all adults. The study also found that ninety-nine percent can write their names, eighty percent can read a map or write a check for a bill, seventy percent can understand an appliance warranty or write a letter about a billing error, twenty-five percent can calculate the amount of a tip correctly, and fewer than ten percent can correctly figure the cost of a catalog order or understand a complex bus schedule.

Which statement about the study is best supported by the above passage?

- a. U.S. literacy rates among young adults are at an all-time high
- b. forty percent of young people in the U.S. cannot write a letter about a billing error
- c. twenty percent of U.S. teen-agers cannot read a map
- d. More than ninety percent of U.S. young adults cannot correctly calculate the cost of a catalog order

2. It is now widely recognized that salaries, benefits and working conditions have more of an impact on job satisfaction than on motivation. If they aren't satisfactory, work performance and morale will suffer. But even when they are high, employees will not necessarily be motivated to work well. For example, The Wall Street Journal recently reported that as many as forty or fifty percent of newly hired Wall Street lawyers (whose salaries start at upwards of \$50,000) quit within the first three years, citing long hours, pressures, and monotony as the prime offenders. It seems there's just not enough of an intellectual challenge in their jobs. An up and coming money-market executive concluded: "Whether it was \$1 million or \$100 million, the procedure was the same. Except for the tension, a baboon could do my job." When money and benefits are

adequate, the most important additional determinants of job satisfaction are: more responsibility, a sense of achievement, recognition, and a chance to advance. All of these factors have a more significant influence on employee motivation and performance. As a footnote, several studies have found that the absence of these nonmonetary factors can lead to serious stress-related illness.

Which statement is best supported by the above passage?

- a. a worker's motivation to perform well is most affected by salaries, benefits and working conditions
- b. low pay can lead to high levels of job stress
- c. work performance will suffer if workers feel they are not paid well
- d. after satisfaction with pay and benefits, the next most important factor is more responsibility

3. The establishment of joint labor-management production committees occurred in the United States during World War I and again during World War II. Their use was greatly encouraged by the National War Labor Board in World War I and the War Production Board in 1942. Because of the war, labor-management cooperation was especially desired to produce enough goods for the war effort, to reduce conflict and to control inflation. The committees focused on how to achieve greater efficiency, and consulted on health and safety, training, absenteeism, and "people" issues in general. During the second world war, there were approximately five thousand labor-management committees in factories, affecting over six million workers. While research has found that only a few hundred committees made significant contributions to productivity, there were additional benefits in many cases. It became obvious to many that workers had ideas to contribute to the running of the organization, and that efficient enterprises could become even more so. Labor-management cooperation was also extended to industries that had never experienced it before. Directly after each war, however, few U.S. labor-management committees were in operation.

Which statement is best supported by the above passage?

- a. the majority of U.S. labor-management committees during the second world war accomplished little
- b. a major goal of U.S. labor-management committees during the first and second world wars was to increase productivity
- c. there were more U.S. labor-management committees during the second world war than during the first world war
- d. there are few U.S. labor-management committees in operation today

4. Studies have found that stress levels among employees who have a great deal of customer contact or a great deal of contact with the public can be very high. There are many reasons for this. Sometimes stress results when the employee is caught in the middle -- an organization wants things done one way, but the customer wants them done another way. The situation becomes even worse for the employee's stress levels when he or she knows ways to more effectively provide the service, but isn't allowed to by the organization. An example is the bank teller who is required to ask a customer for two forms of identification before he or she can cash a check, even though the teller knows the customer well. If organizational mishaps occur or if there are problems with job design, the employee may be powerless to satisfy the customer, and also powerless to protect himself or herself from the customer's wrath. An example of this is the waitress who is forced to serve poorly prepared food. Studies have also found, however, that if the organization and the employee design the positions and the service encounter well, and encourage the use of effective stress management techniques, stress can be reduced to levels that are well below average.

Which statement is best supported by the above passage?

- a. it's likely that knowledgeable employees will experience greater levels of job-related stress
- b. the highest levels of occupational stress are found among those employees who have a great deal of customer contact
- c. organizations can contribute to the stress levels of their employees by poorly designing customer contact situations
- d. stress levels are generally higher in banks and restaurants

5. It is estimated that approximately half of the U.S. population possess varying degrees of adrenal malfunction. When under stress for long periods of time, the adrenals produce extra cortisol and norepinephrine. By producing more hormones than they were designed to comfortably manufacture and secrete, the adrenals can "burn out" over time and then decrease their secretion. When this happens, the body loses its capacity to cope with stress, and the individual becomes sicker more easily and for longer periods of time. A result of adrenal malfunction may be a diminished output of cortisol. Symptoms of diminished cortisol output include any of the following: craving substances that will temporarily raise serum glucose levels such as caffeine, sweets, soda, juice, or tobacco; becoming dizzy when standing up too quickly; irritability; headaches; and erratic energy levels. Since cortisol is an anti-inflammatory hormone, a decreased output over extended periods of time can make one prone to inflammatory diseases such as arthritis, bursitis, colitis and allergies. (Many food and pollen allergies disappear when adrenal function is restored to normal.) The patient will have no reserve energy, and infections can spread quickly. Excessive cortisol production, on the other hand, can decrease immunity, leading to frequent and prolonged illnesses.

Which statement is best supported by the above passage?

- a. those who suffer from adrenal malfunction are most likely to be prone to inflammatory diseases such as arthritis and allergies
- b. the majority of Americans possess varying degrees of adrenal malfunction
- c. it's better for the health of the adrenals to drink juice instead of soda
- d. too much cortisol can inhibit the body's ability to resist disease

6. Psychologist B. F. Skinner pointed out long ago that gambling is reinforced, either by design or accidentally, by what he called a variable ratio schedule. A slot machine, for example, is cleverly designed to provide a payoff after it has been played a variable number of times. Although the person who plays it and wins while playing receives a great deal of momentary reinforcement, over the long run the machine will take in much more money than it pays out. Research on both animals and humans has consistently found that such variable reward schedules maintain a very high rate of repeat behavior, and that this behavior is particularly resistant to extinction.

Which statement is best supported by the above passage?

- a. gambling, because it is reinforced by the variable ratio schedule, is more difficult to eliminate than most addictions
- b. if someone is rewarded or wins consistently, even if it is not that often, he or she is likely to continue that behavior
- c. playing slot machines is the safest form of gambling, because they are designed so that eventually the player will indeed win
- d. a cat is likely to come when called if its owner has trained it correctly

7. Paper entrepreneurialism is an offshoot of scientific management that has become so extreme that it has lost all connection to the actual workplace. It generates profits by cleverly manipulating rules and numbers that only in theory represent real products and real assets. At its worst, paper entrepreneurialism involves very little more than imposing losses on others for the sake of short-term profits. The others may be taxpayers, shareholders who end up indirectly subsidizing other shareholders, consumers, or investors. Paper entrepreneurialism has replaced product entrepreneurialism, is seriously threatening the U.S. economy, and is hurting our necessary attempts to transform the nation's industrial and productive economic base. An example is the U.S. company that complained loudly in 1979 that it did not have the \$200 million needed to develop a video-cassette recorder, though demand for them had been very high. The company, however, did not hesitate to spend \$1.2 billion that same year to buy a mediocre finance company. The video recorder market was handed over to other countries, who did not hesitate to manufacture them.

Which statement is best supported by the above passage?

- a. paper entrepreneurialism involves very little more than imposing losses on others for the sake of short-term profits
- b. shareholders are likely to benefit most from paper entrepreneurialism
- c. paper entrepreneurialism is hurting the U.S. economy
- d. the U.S. could have made better video cassette recorders than the Japanese but we ceded the market to them in

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8. The "prisoner's dilemma" is an almost 40-year-old game-theory model psychologists, biologists, economists and political scientists use to try to understand the dynamics of competition and cooperation. Participants in the basic version of the experiment are told that they and their "accomplice" have been caught red-handed. Together, their best strategy is to cooperate by remaining silent. If they do this, each will get off with a 30-day sentence. But either person can do better for himself or herself. If you double-cross your partner, you will go scott free while he or she serves ten years. The problem is, if you each betray the other, you will both go to prison for eight years, not thirty days. No matter what your partner chooses, you are logically better off choosing betrayal. Unfortunately, your partner realizes this too, and so the odds are good that you will both get eight years. That's the dilemma. (The length of the prison sentences is always the same for each variation.) Participants at a recent symposium on behavioral economics at Harvard University discussed the many variations on the game that have been used over the years. In one standard version, subjects are paired with a supervisor who pays them a dollar for each point they score. Over the long run, both subjects will do best if they cooperate every time. Yet in each round, there is a great temptation to betray the other because no one knows what the other will do. The best overall strategy for this variation, was found to be "tit for tat," doing unto your opponent as he or she has just done unto you. It is a simple strategy, but very effective. The partner can easily recognize it and respond. It is retaliatory enough not to be easily exploited, but forgiving enough to allow a pattern of mutual cooperation to develop.

Which statement is best supported by the above passage?

- a. the best strategy for playing "prisoner's dilemma" is to cooperate and remain silent
- b. if you double-cross your partner, and he or she does not double-cross you, your partner will receive a sentence of eight years
- c. when playing prisoner's dilemma, it's best to double-cross your partner
- d. if you double-cross your partner, and he or she doublecrosses you, you will receive an eight-year sentence

9. After many years of experience as the vice president and general manager of a large company, I feel like I know what I'm looking for in a good manager. First, the manager has to be comfortable with himself or herself, and not be arrogant or defensive. Secondly, he or she has to have a genuine interest in people. There are some managers who love ideas -- and that's fine -- but to be a manager, you must love people, and you must make a hobby of understanding them, believing in them and trusting them. Third, I look for a willingness and a facility to manage conflict. Gandhi defined conflict as a way of getting at the truth. Each person brings his or her own grain of truth and the conflict washes away the illusion and fantasy. Finally, a manager has

to have a vision, and the ability and charisma to articulate it. A manager should be seen as a little bit crazy. Some eccentricity is an asset. People don't want to follow vanilla leaders. They want to follow chocolate-fudge-ripple leaders.

-- William H. Peace

Which statement is best supported by the above passage?

- a. it's very important that a good manager spend time studying people
- b. it is critical for good managers to love ideas
- c. managers should try to minimize or avoid conflict
- d. managers should be familiar with people's reactions to different flavors of ice cream

10. Most societies maintain a certain set of values and assumptions that make their members feel either good or bad about themselves, and either better or worse than other people. In most developed countries, these values are based on the assumption that we are all free to be what we want to be, and that differences in income, work and education are a result of our own efforts. This may make us believe that people with more income, work that is more skilled, more education and more power are somehow "better" people. We may view their achievements as proof that they have more intelligence, more motivation and more initiative than those with "lower" status. The myth tells us that power, income and education are freely and equally available to all, and that our failure to achieve them is due to our own personal inadequacy. This simply isn't the case.

The possessions we own may also seem to point to our real worth as individuals. The more we own, the more worthy of respect we may feel we are. Or, the acquisition of possessions may be a way of trying to fulfill ourselves, to make up for the loss of community and/or purpose. It is a futile pursuit because lost community and purpose can never be compensated for by better cars or fancier houses. And too often, when these things fail to satisfy, we believe it is only because we don't have enough money to buy better quality items, or more items. We feel bad that we haven't been successful enough to get all that we think we need. No matter how much we do have, goods never really satisfy for long. There is always something else to acquire, and true satisfaction eludes many, many of us.

Which statement is best supported by the above passage?

- a. the author would agree with the theory of "survival of the fittest"
- b. the possessions an individual owns are not a proper measure of his or her real worth
- c. many countries make a sincere attempt to ensure equal access to quality education for their citizens
- d. the effect a society's value system has on the lives of its members is greatly exaggerated

11. De nihilo nihil is Latin for "nothing comes from nothing." In the first century, the Roman poet Persius advised that if anything is to be produced of value, effort must be expended. He also said, "In nihilum nil posse reverti" -- anything once produced cannot become nothing again. It is thought that Persius was parodying Lucretius, who expounded the 500-year-old physical theories of Epicurus. De nihilo nihil can also be used as a cynical comment, to negatively comment on something that is of poor quality produced by a person of little talent. The implication here is: "What can you expect from such a source?"

Which statement is best supported by the above passage?

- a. in nihilum nil posse reverti can be interpreted as meaning "if anything is to be produced of value, then effort must be expended"
- b. de nihilo nihil can be understood in two different ways
- c. Lucretius was a great physicist
- d. Persius felt that Epicurus put in little effort while developing his theories

12. A Cornell University study has found that less than one percent of the billion pounds of pesticides used in this country annually strike their intended targets. The study found that the pesticides, which are somewhat haphazardly applied to 370 million acres, or about sixteen percent of the nation's total land area, end up polluting the environment and contaminating almost all 200,000 species of plants and animals, including humans. While the effect of indirect

contamination on human cancer rates was not estimated, the study found that approximately 45,000 human pesticide poisonings occur annually, including about 3,000 cases admitted to hospitals and approximately 200 fatalities.

Which statement about the study is best supported by the above passage?

- a. it is likely that indirect pesticide contamination affects human health
- b. pesticides are applied to over one quarter of the total U.S. land area
- c. if pesticides were applied more carefully, fewer pesticide-resistant strains of pests would develop
- d. human cancer rates in this country would drop considerably if pesticide use was cut in half

13. The new conservative philosophy presents a unified, coherent approach to the world. It offers to explain much of our experience since the turbulent 1960's, and it shows what we've learned since about the dangers of indulgence and permissiveness. But it also warns that the world has become more ruthless, and that as individuals and as a nation, we must struggle for survival. It is necessary to impose responsibility and discipline in order to defeat those forces that threaten us. This lesson is dramatically clear, and can be applied to a wide range of issues.

Which statement is best supported by the above paragraph?

- a. the 1970's were a time of permissiveness and indulgence
- b. the new conservative philosophy may help in imposing discipline and a sense of responsibility in order to meet the difficult challenges facing this country
- c. the world faced greater challenges during the second world war than it faces at the present time
- d. more people identify themselves today as conservative in their political philosophy

14. One of the most puzzling questions in management in recent years has been how usually honest, compassionate, intelligent managers can sometimes act in ways that are dishonest, uncaring, and unethical. How could top-level managers at the Manville Corporation, for example, suppress evidence for decades that proved beyond all doubt that asbestos inhalation was killing their own employees? What drove the managers of a midwest bank to continue to act in a way that threatened to bankrupt the institution, ruin its reputation, and cost thousands of employees and investors their jobs and their savings? It's been estimated that about two out of three of America's five hundred largest corporations have been involved in some form of illegal behavior. There are, of course, some common rationalizations used to justify unethical conduct: believing that the activity is in the organization's or the individual's best interest, believing that the activity is not "really" immoral or illegal, believing that no one will ever know, or believing that the organization will sanction the behavior because it helps the organization. Ambition can distort one's sense of "duty."

Which statement is best supported by the above passage?

- a. top-level managers of corporations are currently involved in a plan to increase ethical behavior among their employees
- b. there are many good reasons why a manager may act unethically
- c. some managers allow their ambitions to override their sense of ethics
- d. in order to successfully compete, some organizations may have to indulge in unethical or illegal behavior from time to time

15. Some managers and supervisors believe that they are leaders because they occupy positions of responsibility and authority. But leadership is more than holding a position. It is often defined in the management literature as "the ability to influence the opinions, attitudes, and behaviors of others." Obviously, there are some managers that would not qualify as leaders, and some leaders that are not "technically" managers. Research has found that many people overrate their own leadership abilities. In one recent study, seventy percent of those surveyed rated themselves in the top quartile in leadership abilities, and only two percent felt they were below average as leaders.

Which statement is best supported by the above paragraph?

- a. in a recent study, the majority of people surveyed rated themselves in the top twenty-five percent in leadership abilities
- b. ninety-eight percent of the people surveyed in a recent study had average or above average leadership skills
- c. in order to be a leader, one should hold a management position
- d. leadership is best defined as the ability to be liked by those one must lead

EVALUATING CONCLUSIONS IN THE LIGHT OF KNOWN FACTS

For the following questions, select the letter before the statement below which best expresses the relationship between the facts and the conclusions.

1. **FACTS:** Andy types half as fast as Bill. Bill types twice as slow as Charlie. Bill types 60 words a minute.

CONCLUSION: Charlie types 30 words a minute.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

2. **FACTS:** If Albert gets traded to the Cubs, Chris will have to be traded to the Padres. Albert will avoid being traded only if he hits a home run in his turn at bat. If Chris goes to the Padres, Dave will be traded to the Dodgers. Albert strikes out in this crucial at-bat.

CONCLUSION: Dave gets traded to the Dodgers.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

3. **FACTS:** All beads are forms of jewelry. All jewelry is expensive. Everyone loves expensive beads.

CONCLUSION: All beads are expensive.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

4. FACTS: No shrimp are mussels. Mussels are bivalves. All mussels have shells.

CONCLUSION: Therefore, no shrimp have shells.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

5. FACTS: On their latest diet, Abby, Bea, Celia and Donna lost a combined total of 260 pounds. Abby lost twice as much as Celia. Celia lost half as much as the woman who lost the most. Donna lost 80 pounds.

CONCLUSION: Abby lost 100 pounds; Bea, 30; Celia, 50; and Donna, 80.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

6. FACTS: Ann's office is two floors above Brenda's. Brenda's office is one floor below the only woman in the building whose birthday is today. Sally's office is on the third floor. Ann's office is on the fourth floor.

CONCLUSION: Today is Ann's birthday.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

7. FACTS: Douglas Ave. is perpendicular to Bates St. Bates St. is parallel to Adams Ave. Douglas Ave. is parallel to Charles St. Evans Ave. is parallel to the streets that are perpendicular to Bates St.

CONCLUSION: Evans Ave. is perpendicular to Douglas Ave.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

8. FACTS: There's one out, and Bill is the runner on third base. If Arnie hits the ball hard, Bill will run, but so slowly that he will be out at home plate. The team captain, on second base, will not run unless Arnie hits the ball hard. The captain runs.

CONCLUSION: Bill is safe.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

9. FACTS: Some members of this genus are members of that species. All members of that species are butterflies. Some butterflies are different from others.

CONCLUSION: Some members of this genus are butterflies.

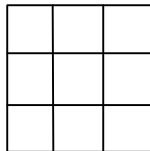
- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

10. FACTS: Some woodwinds are clarinets. Flutes are not clarinets. All clarinets are beautiful things.

CONCLUSION: Therefore, all beautiful things are woodwinds.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

11. FACTS: Using a grid exactly like the one below, Joe Genius filled in the numbers 1 through 9 in the boxes. Each horizontal, vertical and diagonal row added up to 15. A different number went in each box.



CONCLUSION: The number Joe put in the middle box was 6.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

12. FACTS: Max, Nick, Pete and Ollie all bought different colored suits: grey, green, blue and brown, but not necessarily respectively. Max paid less for his green suit than Nick paid for his suit. Ollie paid twice what Pete paid. Pete paid the same as the man who bought the grey suit. Ollie bought the brown suit.

CONCLUSION: Ollie paid the most.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

13. FACTS: Four people (Alice, Bob, Carol and Dave) are sitting at a square table, discussing their favorite sports. Bob sits directly across from the jogger. Carol sits to the right of the basketball player. Alice sits across from Dave. The golfer sits to the left of the tennis player. A man sits on Dave's right.

CONCLUSION: Dave plays golf.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

14. FACTS: An employer decided to offer a job to everyone who scored higher than 50 on an exam. Alice scored 20. Betty scored lower than Carol, but more than twice as high as Alice.

CONCLUSION: Of the three women, only Carol was offered the job.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

15. FACTS: If Camille's squirrel has rabies and the squirrel bites Casey's cat, the squirrel will have to be caught and the cat will get rabies. If the cat has had rabies shots within the last two years, the cat will not get rabies. Casey's cat did not get rabies.

CONCLUSION: Casey's cat has had rabies shots within the last two years.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

16. FACTS: Sally will file a grievance only if Bill fires her. If Laura tells Frank the whole story, Frank will tell it to Bill. If Bill hears the whole story, he will not fire Sally. Laura tells Fred the whole story.

CONCLUSION: Sally files a grievance.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

17. FACTS: If Alice leaves work early, Barb has to work late, and Barb wants to go to the game tonight. The singing of the National Anthem always precedes the game. Carl calls Alice and asks her out to dinner. Due to a thunderstorm, the singing of the National Anthem gets delayed. If Alice goes out to dinner with Carl, she will have to leave work early so she can go home and turn off her crockpot. Alice accepts Carl's invitation.

CONCLUSION: Barb misses the first inning of the game.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

18. FACTS: Earl thinks of any whole number from 1 through 10. Because she is using the most efficient system, Eva absolutely guarantees Earl that she can correctly guess the number he's thinking of in five questions or less. Eva asks Earl a series of "yes/no"

questions and guesses the number in five questions or less every time. Earl and Eva agree to play the game again in the exact same way, except that he will think of a whole number from 1 through 6.

CONCLUSION: Using the same system, four is the absolute highest number of "yes/no" questions that Eva will need to ask in order to guess the number that Earl is thinking of this time.

- A. The facts prove the conclusion₁
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

19. FACTS: Lois will cook dinner today only if Ted, Robbie and Jennifer are all home by 6 p.m. Robbie will come home by 6 p.m. only if band practice ends early. If Ted plays softball after work, he will take Jennifer with him, and they will not be home by 6 p.m. Band practice ends early today.

CONCLUSION: Lois cooks dinner today.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

20. FACTS: Three card players each start with \$10. Each round they play has two losers and one winner. The losers in each round have to give the winner \$2 apiece. Chuck wins the first and third rounds; Bruce wins the second. At the end of the third round, Artie proposes that they change the rules so that the losers each have to give the winner half their accumulated money. They agree, play one more round, and Artie wins it.

CONCLUSION: At the end of the fourth round, Chuck has less money than Artie.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

21. FACTS: No part-time workers at this plant get paid vacations. All cleaners at this plant are part-time workers. Joe gets a paid vacation.

CONCLUSION: All cleaners at this plant get paid vacations.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

22. FACTS: If Myles breaks the lamp, Lucy will scream. If Tom finds Rachel spraying Windex into the cat's dish, he'll scream. If Geoffrey doesn't hear from the French soon, he'll scream. Tom screams.

CONCLUSION: Myles broke the lamp.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

23. FACTS: If Tina goes to the store, Ike will go with her. If Ike goes to the store, he will buy doughnuts. If Dick cleans the house, Sally will go to the store. If Sally goes to the store, Tina will go with her. Dick cleans the house.

CONCLUSION: Ike buys doughnuts.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

24. FACTS: If Joe passes the test, Jill won't apply for the job. If Jill applies for the job, she'll get it. If Jill doesn't apply for the job, Jeanne will be annoyed. Joe passes the test.

CONCLUSION: Jeanne gets annoyed.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

25. **FACTS:** Mary, Debbie, May and Joan are the only people waiting for the photocopier to be fixed. When it's fixed, Debbie has to use it first because she's doing work for the boss. Joan has to use it right after the person who's been waiting the longest. The person who has the most work to copy gets to use the machine second. May has been waiting the longest. The person who has been waiting longest is not the person who has the most work to copy.

CONCLUSION: Joan gets to use the photocopier third.

- A. The facts prove the conclusion.
- B. The facts disprove the conclusion.
- C. The facts neither prove nor disprove the conclusion.

ANSWER KEY

UNDERSTANDING AND INTERPRETING
WRITTEN MATERIAL

- | | | |
|------|-------|-------|
| 1. d | 6. b | 11. b |
| 2. c | 7. c | 12. a |
| 3. b | 8. d | 13. b |
| 4. c | 9. a | 14. c |
| 5. d | 10. b | 15. a |

EVALUATING CONCLUSIONS
IN THE LIGHT OF KNOWN FACTS

- | | | | | |
|------|-------|-------|-------|-------|
| 1. B | 6. B | 11. B | 16. C | 21. B |
| 2. A | 7. B | 12. A | 17. C | 22. C |
| 3. A | 8. B | 13. A | 18. A | 23. A |
| 4. C | 9. A | 14. C | 19. C | 24. A |
| 5. C | 10. C | 15. C | 20. A | 25. B |

ANSWERS AND EXPLANATIONS

UNDERSTANDING AND INTERPRETING WRITTEN MATERIAL

1. The answer is choice d. Choice a is incorrect because the passage does not state this, and does not compare these literacy rates with those from other years. Choice b is incorrect because the passage states that 70% can write a letter about a billing error. This means that, out of a total of 100%, 70% can do this, and 30% can't -- not 40%. Choice c is incorrect because it says 20% of U.S. teen-agers. This is tricky, but the wording throughout the passage states young adults and indicates that this means aged 21-25. Choice d is correct because the last sentence states that fewer than 10% can correctly figure the cost of a catalog order. This means that, out of a full 100%, more than 90% can't figure the cost of an order.

2. The answer is choice c. Choice a is incorrect because it is contradicted by the first and third sentences. Choice b is incorrect because it is not stated anywhere in the passage. Choice d is incorrect because, while the passage does state that responsibility is an important factor, it does not state that it is the next most important factor after pay and benefits. We can't assume that, because it is first in the list of additional factors, it's also the most important of these. Choice c is directly supported by the first two sentences.

3. The answer is choice b. We can't say that choice a is correct because, while the passage states that "only a few hundred committees made significant contributions to productivity," it also states there were additional benefits in many cases, and goes on to list other gains made by the committees. There is nothing in the passage to support the statement that the majority of the committees accomplished little. Productivity is only one factor, and it's possible that the majority of the committees contributed to showing that workers had ideas, or other benefits not mentioned in the paragraph (increased job satisfaction, for example). Choice c is incorrect because it is not stated or implied anywhere in the passage. Choice d is incorrect because it assumes too much. The passage says, "Directly after each war, few U.S. labor-management committees were in operation." The second world war ended more than 30 years ago; we don't know what has happened since then. Besides choice b is a better answer. Choice b is directly supported by the third and fourth sentences, which talk about producing enough goods and achieving greater efficiency.

4. The answer is choice c. Choice a is incorrect because it is not stated anywhere in the passage. You may have been tempted to choose it because of sentences four and five, but simply because one knows something does not mean that one is knowledgeable in general. While choice b may seem reasonable, it is incorrect because it is not stated anywhere in the passage. The first sentence merely states that stress levels are very high among those who have a great deal of customer contact. It does not say the highest. Choice d is also not stated anywhere in the passage. Choice c is supported by the last three sentences of the passage.

5. The answer is choice d. Choice a is incorrect because it is not stated in the passage, although if you read it quickly you might think it was. It's always very important to read all of the choices because it lessens the chances of jumping to an incorrect conclusion. It's also important because you're being asked to pick the best of the possible choices. One choice may seem likely, but another may be a lot better. In this case, choice a is incorrect because the passage says that decreased output of cortisol (a result of adrenal malfunction) "can make one prone to inflammatory diseases." Choice a, on the other hand, says "most likely to be prone." This is a difference in probability; one says that something happens sometimes (it's rather vague, so you don't know how often), the other says that it's very likely to happen. Choice a also makes it seem as if those who are suffering from adrenal malfunction are more likely than other people to suffer from these diseases. The passage does not say this. Choice b is incorrect because the first sentence states that "approximately half" of the U.S. population have varying degrees of adrenal malfunction. This is not a majority because approximately could mean that a little less than half suffers from adrenal malfunction. Choice c is incorrect because it's assuming too much. We aren't told how the author feels about juice, and it's possible that he or she might think juice wasn't better for the adrenals. The juice could be very sweet and contain sugar, while the soda could be a diet soda. It's best to stick with what's directly stated or implied in the passage. Choice d is supported directly by the last sentence. If you skipped the last sentence or read it too quickly, you might have been confused by previous sentences which talked about too little cortisol.

6. The answer is choice b. Choice a is incorrect because it is not stated anywhere in the passage. The final sentence states that it is difficult to eliminate but does not compare it to other addictions. Choice c is incorrect because it too is not stated anywhere in the passage. In addition, the reader can't assume that a slot machine provides the best odds to win from the information given in the passage. Choice d is incorrect because it is not implied or stated anywhere in the passage. It could be related to the passage if variable rate reinforcement were used to train the cat, but there is nothing to indicate this. Choice b is supported by the last two sentences of the passage. You may not have cared much for the wording of choice b, but it's important to become comfortable with choosing the best answer available. You might think that choice b assumes too much, but it is simply paraphrasing the ideas in the last two sentences. Sentence three says that the machine will take in more money than it pays out. Common sense will tell you that this means people won't win that often. Sentence four states that "variable reward schedules" (or consistently rewarding people on an irregular basis) maintain behavior that is resistant to extinction" (or a difficult habit to break). Sometimes you're not going to like any

of the choices, but it's important to remember that you always need to pick the best answer of the ones you are given.

7. The answer is choice c. Choice a is incorrect because of the way it is worded. It sounds as if paper entrepreneurialism always (or at least generally) involves little more than imposing losses on others. But the third sentence of the passage states that "at its worst, paper entrepreneurialism involves very little more than imposing losses on others for the sake of short-term profits." This is a very big difference in degree. Choice b is incorrect because the passage doesn't say who will benefit the most. The passage mentions "shareholders who end up indirectly subsidizing other shareholders." This means that there are shareholders who do not benefit at all. Perhaps only a select few are benefiting, and the majority are being hurt. Perhaps it's the financial planners who benefit more than anyone else. You just don't know. Choice d is incorrect because it also assumes too much. There's nothing in the passage that would indicate that the U.S. could have made better VCR's than the Japanese. Nor does the passage say that it was just the Japanese who were "given" the market. You may know that the majority of VCR's are Japanese-made, but it doesn't say this anywhere in the passage. You have to be very careful not to read things into these passages. Choice c is correct and is directly supported by the fifth sentence. Even though the fifth sentence doesn't support choice c as strongly as you might like, it's the best of the four possible choices.

8. The answer is choice d. Choice a is incorrect because it is too sweeping a statement. The passage does state that "their best strategy is to cooperate by remaining silent." It's referring, however, to the previous sentence which talks about the basic version. Later the passage mentions that variations on the game exist, but never gives the best strategy for all of the variations. Since choice a does not indicate that it refers just to the basic version, we cannot consider it correct. Choice b is incorrect because the sixth sentence states that in this situation your partner will receive a sentence of ten years. Choice c is incorrect because the general direction of the passage is toward rewarding or emphasizing cooperation, not toward double crossing. The passage seems to indicate that it is advisable to double-cross only when you have been double-crossed. Of course, this may not hold for all the versions, but the weight of the evidence is against choice c. Choice d is correct because it is directly supported by the seventh sentence and backed up, in regard to all versions, by the eleventh sentence.

9. The answer is choice a. Choice b is incorrect because it is not supported by the passage. The passage states "there are some managers who love ideas -- and that's fine -- but . . ." This is not the same as choice b, which states "it is critical for good managers to love ideas." Choice c is incorrect because it is not mentioned in the passage, and is contradicted by the fifth sentence. Choice d is a throw-away choice; it's an easy choice to discard without much thought. Choice a is directly supported by the fourth sentence. If the manager makes "a hobby of understanding" people, he or she obviously must spend time studying them. Again, you may feel that this is assuming too much, but it is the only possible answer.

10. The answer is choice b. Choice a is incorrect because it is stated or implied nowhere in the passage. Choice c is incorrect because the passage does not state this. We don't know what many countries have done. The passage discusses only the developed countries, a minority of the world's countries. And even in regard to developed countries, the author does not actually say that attempts have been made to ensure equal access. He or she talks about a myth in which education is one of the factors that is "freely and equally available to all." Choice d is incorrect because it is stated nowhere in the passage, and would, in fact, seem to be contradicted by the first sentence. Choice b is correct and is implied by the second paragraph. The first sentence of that paragraph states that the "possessions we own may also seem to point to our real worth as individuals." The remainder of the paragraph indicates that the author does not agree with this.

11. The answer is choice b. Choice a is incorrect because it is the Latin phrase *de nihilo nihil*, not *nihilum nil posse reverti*, which can be interpreted to mean "if anything is to be produced of value, then effort must be expended." Choice c is incorrect because it is not stated in the passage. Lucretius is only mentioned in passing, and then in the context of being parodied and as a person who expounded the physical theories of another. Choice d is incorrect because there is no way we can know if this is true from the information given in the passage. Choice b is directly supported by the first and fifth sentences which give two ways the phrase can be understood.

12. The answer is choice a. A tricky question. Choice b is incorrect because the passage states that pesticides are applied to about 16% of the nation's total land area -- not to over one quarter (25%). Choice c is incorrect because it is not stated anywhere in the passage. You may think this is true from outside reading, and so you may have "read" it into the passage, but nowhere are pesticide-resistant strains of pests mentioned. Choice d is incorrect for the same reason. The passage states that "the effects of indirect contamination on human cancer rates was not estimated," and the deaths it mentions have resulted from pesticide poisoning. Choice a is correct because, while it may not be the ideal answer, it is better than the other three choices. It, at least, is implied by the passage. The passage talks of the direct effect of pesticides on human health, and also states that they "end up polluting the environment and contaminating all 200,000 species of plants and animals, including humans." Remember, you need to be willing to select the best of the four choices, even if it's worded in a way that makes you uncomfortable.

13. The answer is choice b. Choice a is incorrect because the passage referred to the 1960's in this context, not the 1970's. Choice c is incorrect because it is not stated or implied anywhere in the passage. Choice d is incorrect because, while the passage states the values of the new conservatism, it does not mention its popularity or if this has changed. It's important not to read too much into the question. Choice b is implied specifically by sentence four, and generally by the sentences that precede it. The subject of sentence four (it) is unclear, but that doesn't really matter. You don't really know whether "it" stands for the conservative philosophy itself, or is just being used to introduce the ideas in the sentence, but the entire paragraph leans toward the new conservative philosophy. Because of the author's slant, it is safe to say that the philosophy may help in imposing responsibility, etc.

14. The answer is choice c. Choice a is incorrect because it is not stated anywhere in the passage. Choice b is incorrect because, while the passage states that there are "some common rationalizations used to justify unethical conduct," this is not the same as stating that there are many good reasons why a manager may act unethically. The author clearly feels that the rationalizations are excuses, not good reasons. Choice d is incorrect because it is not stated anywhere in the passage. A variation of choice d -- that the organization will sanction the behavior because it helps the organization -- is given as one of the rationalizations, not as the truth. Choice c is directly supported by the last two sentences.

15. The answer is choice a. Choice b is incorrect because the passage does not state that 98% of the people surveyed had average or above average leadership skills; it states that they thought they had these skills. This is not the same thing. Choice c is incorrect because it is not stated anywhere in the passage that one should hold a management position in order to be a leader. Choice d is incorrect because it too is not stated anywhere in the passage. Choice a is directly supported by the last sentence, which states that 70% (the majority) rated themselves in the top quartile. The top quartile means the top 25%. If you weren't sure what quartile meant, you could still have answered correctly by eliminating the other choices.

ANSWERS AND EXPLANATIONS

EVALUATING CONCLUSIONS IN THE LIGHT OF KNOWN FACTS

1. The answer is B. This is an easy problem if you read it carefully. The third sentence says that Bill types 60 words a minute; the second sentence says that Bill types twice as slow as Charlie. If Bill types twice as slow as Charlie, then Charlie types twice as fast as Bill, or 2×60 . This means that Charlie types 120 words a minute, not 30 words a minute. These two sentences alone are all you need to disprove the conclusion; the first sentence is just a decoy. If you had "fallen for it" and misread the paragraph, you would most likely have chosen A. You probably would have skimmed the second sentence and assumed that it said, "twice as fast," just because the first sentence said, "half as fast."

2. The answer is A. This question may look more difficult than it is because the facts are thrown together haphazardly. Many of these logic questions present the "facts" in a very strange fashion. No one would ever talk like this in real life -- at least not if they wanted to be understood. The point, of course, is to see how well you can sift through these things, avoid the pitfalls, and find the "truth" of the matter. If you approach a question carefully and attack it systematically, you will usually find that it is not really all that difficult. In this case, by studying the facts, you can see that Albert gets traded. He needs a home run to avoid being traded (sentence 2), but he strikes out in his at-bat (sentence 4). You can assume that this is the at-bat that determines his future because of the way the fourth sentence is worded. It uses the words, "this crucial at-bat." Knowing the sad truth that he's been traded, you can then trace the chain of events: Chris goes to the Padres (sentence 1), which means that Dave goes to the Dodgers (sentence 3). So the conclusion is, indeed, proved by the facts given to us.

3. The answer is A. This is a classic form of logic problem, and, like question 2, it doesn't correspond to reality. We all know perfectly well that some beads are cheap, but that has no bearing on this problem. You often have to let go of your common sense and experience when doing problems like these. Just stick to the facts as they are stated in the problem. The first two sentences are given as facts, and they are enough to prove the conclusion that "all beads are expensive." In any problem where you are told that a given fact is all-inclusive, such as that "all A are B," you can just substitute A for B in any other factual sentence in the problem. What is true of B is true of A. Therefore, when you come across another all-inclusive "truth," such as "all B are C, you know that "all A are C" must be true, too.

Here are two examples. Although only one corresponds to reality as we know it, they both follow the logic formula we've outlined above, and so both are "true" according to logic.

All dogs (A) are mammals (B).
All mammals (B) have backbones (C).
All dogs (A) have backbones (C).

All apples (A) are bananas (B).
All bananas (B) have yellow skins (C).
All apples (A) have yellow skins (C).

Note that this does not work in reverse. All bananas aren't necessarily apples, all things with yellow skins aren't necessarily bananas or apples, and all mammals aren't necessarily dogs. Don't worry if this is confusing to you. The key here is to know the formula and not think about it too much in terms of reality.

In this problem, the "A" is the beads, the "B" is the jewelry, and the "C" is "expensive."

4. The answer is C. This looks a lot like the previous question, but, in fact, the sentences show no relationship between shrimp and shells. You can eliminate the second sentence because it has nothing at all to do with the conclusion. Of the two remaining sentences, one says that mussels have shells, the other says that no shrimp are mussels. This doesn't tell us that no shrimp have shells because it is not really telling us anything about how these two animals compare with each other on this issue. It's as if we said, "all boys like sports" and "no boys are girls." These statements don't tell us whether girls like sports. They tell us that boys and girls are different, but we don't know how different they are. Are they completely different, or do they have things in common? Is liking sports one of the ways they differ or one of the ways they are alike?

For this reason, there is also nothing in the question to show that shrimp do have shells. Here we have another case where common sense can get you into trouble. You may want to choose answer B, simply because you know that the conclusion is false. But you are not being asked whether the conclusion is true or false; you are being asked whether it is proved true or false by the facts as given. If sentence 3 had said, only mussels have shells, then the facts would prove the conclusion, even if that doesn't correspond to reality. But as it is, the facts neither prove nor disprove the conclusion.

5. The answer is C. This is a tricky one. You may have added all the pounds in the conclusion, and been relieved to find that they totaled the 260 pounds mentioned in the first sentence. You would have been tricked into picking A because the numbers checked out. But it doesn't matter that the numbers match because the problem here is to decide whether the facts prove that those are the exact number of pounds each woman lost. And the facts show that, without knowing Bea's weight loss, we're sure of only one figure -- Donna's 80-pound weight loss. This is shown below:

<u>NAME</u>	<u>AMOUNT LOST</u>
Abby	2 x Celia
Bea	?
Celia	1/2 of Abby
Donna	80

You may have tried to work the problem by assuming that Donna's 80 pounds was the highest amount lost because that clue is contained in the problem. If Donna's 80 pounds were the greatest weight loss, Celia would have lost 40 pounds because sentence 3 says that Celia lost half of the greatest amount lost. But this creates a problem because it would mean that Abby also lost 80. Sentence 2 says Abby lost twice what Celia lost. And Abby couldn't have lost 80 pounds because that would mean that two women (Abby and Donna) lost the most. This is impossible because sentence 3 says Celia lost half as much as the woman (not women) who lost the most. So the greatest amount lost must have been more than 80 pounds, and Abby must have been the one who lost it. All we know, then, is the following: Donna lost 80 pounds, the greatest amount lost was more than 80 pounds, Celia's amount was half the greatest amount, and Abby lost more than 80 pounds. As long as all these conditions are met, Bea's loss might be any amount that makes up the difference between 260 and the others' total weight loss. For example, the losses could have been:

Abby	84	OR	Abby	90	OR	Abby	94
Bea	54		Bea	45		Bea	39
Celia	42		Celia	45		Celia	47
Donna	<u>80</u>		Donna	<u>80</u>		Donna	<u>80</u>
	260			260			260

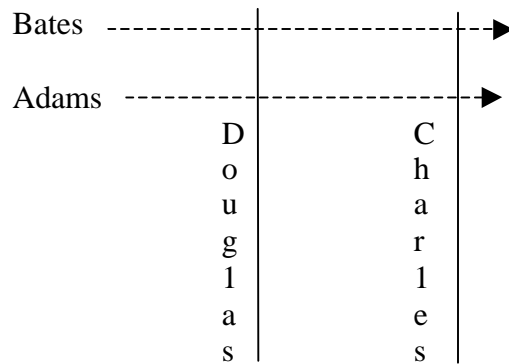
Or many other possible combinations. The facts simply don't give us enough information to either prove or disprove that the amounts given in the conclusion are the actual amounts each woman lost. That's why the correct answer is C.

6. The answer is B. To see why B is the correct answer, it is helpful to draw a diagram of the floors. We know that Ann is on Four (sentence 4) and that Sally is on Three (sentence 3). If Ann is two floors above Brenda (sentence 1), Brenda must be on Two. Now we can draw:

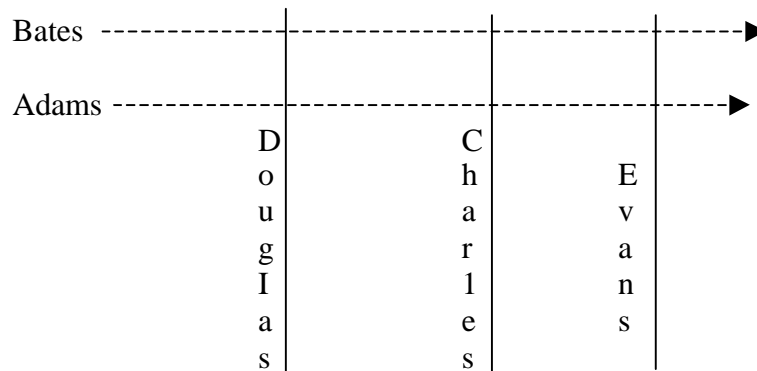
Ann----- (4)
 Sally----- (3)
 Brenda ----- (2)

So, if Brenda is one floor below the birthday-girl (sentence 2), today must be Sally's birthday, not Ann's.

7. The answer is B. Here, you need to know what perpendicular and parallel mean. If you do, a simple diagram should show you that the facts disprove the conclusion. Perpendicular streets are those at right angles to one another, like the two lines in a plus sign (+). Parallel streets are those that run in the same direction, never touching -- like the two l's in the word all. The first three facts tell us that the streets look like this:



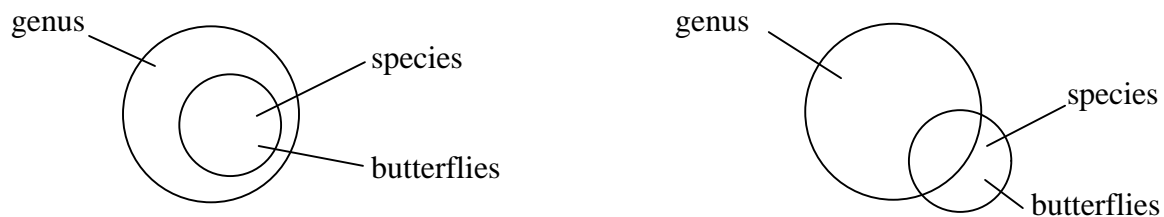
If Evans is parallel to the streets that are perpendicular to Bates (sentence 4), then Evans itself must be perpendicular to Bates. The completed diagram now looks like this:



This diagram graphically shows that Evans is not perpendicular to Douglas, but parallel to it. The facts, then, disprove the conclusion.

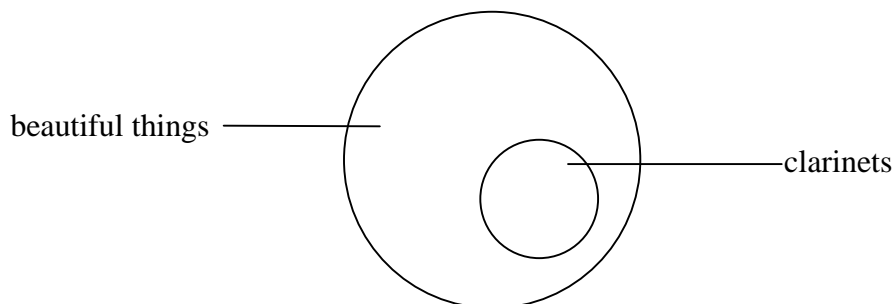
8. The answer is B. If you start from the last fact given in this problem and work backwards, you will be able to find the cause of each event. This will enable you to either prove or disprove the conclusion. In this case, since the last fact says that the captain ran, that must have been because Arnie hit the ball hard (sentence 3). Even though Arnie hit the ball hard, Bill is out because Bill is so slow that he will be out at home plate (sentence 2). This disproves the conclusion, which says he is safe.

9. The answer is A. This is an easy problem if you translate the facts into a picture. First of all, ignore sentence 3, which has nothing to do with the problem. Now, draw a circle to represent all the members of this genus (sentence 1). Next, draw a smaller circle to represent the members of that species (sentence 1). You may know that a species is a subgroup of a genus, just as "semi-precious" is a subgroup of gems, or hardwoods is a subgroup of trees. For this reason, the "species" circle should be contained entirely within the "genus" circle. The problem doesn't tell you this about genus and species, but you don't need to know it to answer the question correctly. You could simply place the smaller circle partially in and partially out of the larger circle. No matter which way you portray the relationship, some members of the genus will belong to that species. You can see this in the diagrams below. Since all members of that species are butterflies (sentence 2), the "species" circle also represents butterflies.

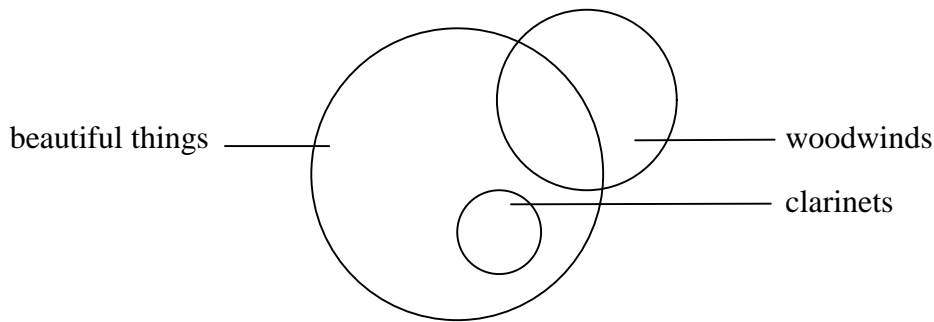


Not all members of this genus are butterflies; this is demonstrated by the fact that there is plenty of room inside the "genus" circle for other, non-butterfly critters. But the picture clearly shows that some members of the genus are butterflies, as the conclusion states.

10. The answer is C. The facts prove only that some woodwinds (those that are clarinets) are beautiful things; they do not prove that all beautiful things are woodwinds. If you draw circles to represent "beautiful things" and "clarinets," the latter would have to be a smaller circle inside the former, since all clarinets are beautiful things (sentence 3).

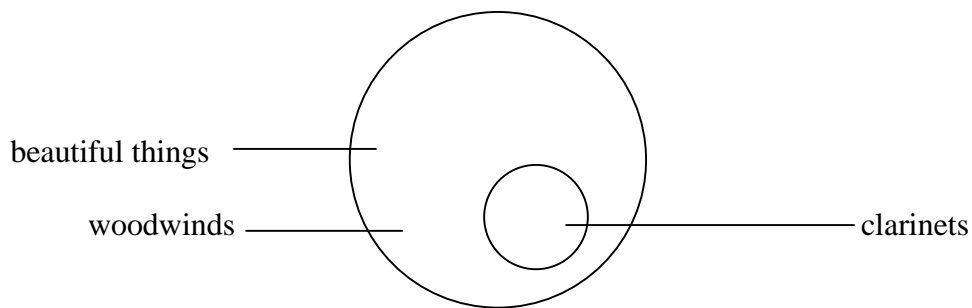


But where does the "woodwind" circle go? All the facts tell us is that some of its members are clarinets. We don't know whether it's bigger, smaller, or the same size as the circle of "beautiful things." It could look like the following:



That way, there could be plenty of beautiful things that are not woodwinds, some beautiful things that are woodwinds and clarinets, and some woodwinds that are beautiful things but not clarinets. And the conclusion would be false.

OR, the "woodwinds" circle could be identical to the "beautiful things" circle:



...making the conclusion true.

You may have circled answer B, simply because the conclusion is obviously a false statement. But remember, the question is not whether the conclusion is true or false; it's whether it is proved or disproved by the facts given. In this case, it is neither proved nor disproved by the facts. Sentence 2, incidentally, is irrelevant, since the rest of the problem has nothing to do with flutes.

11. The answer is B. You could use a trial-and-error approach to this problem, but it would be very time-consuming. As you worked with this problem, you may have realized that, since the number in the middle box gets added to every other number, you can solve the problem more easily by putting 6 into the diagram and adding the larger numbers to it to see if it's workable. After placing 6 in the center, you can see there is nowhere to put 9. The horizontal, vertical, and diagonal rows must add up to 15, but wherever you try to put 9 you will have a row that adds up to more than 15. Since $9 + 6 = 15$ and 0 is not one of the options, there is no number that can be put in the third box in the row.

	6	
		9

diagonal

	6	9

horizontal

	9	
	6	

vertical

So, 6 cannot be the number in the middle box; it's too big. The facts disprove the conclusion.

12. The answer is A. The first sentence in this problem says that these men bought various colored suits, but not necessarily respectively. This means that the first man (Max) didn't necessarily buy the first color suit (grey), the second man (Nick) didn't necessarily buy the second color suit (green), and so on. Respectively means "in the same order."

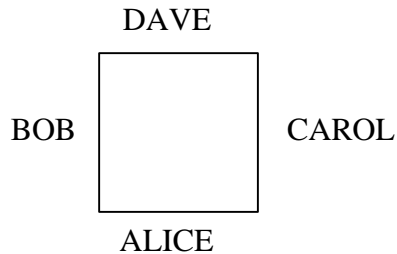
At first glance, this problem looks impossible, but it can be simplified by drawing a chart to show what we "know" about each person:

NAME:	PAID:	FOR THIS COLOR SUIT
Max	less than Nick	green
Nick	same as Pete	grey (not green, brown or blue)
Pete	same as Nick	blue (not grey, green or brown)
Ollie	2x Nick; 2x Pete	brown

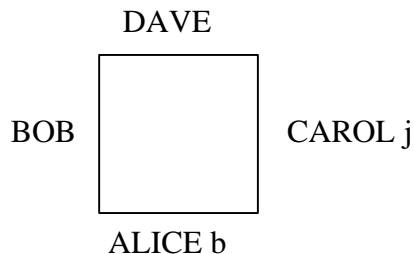
Sentence 2 says Max's suit is green, and sentence 5 says Ollie's is brown, but how do we know Pete's is blue? Well, sentence 4 indicates that someone other than Pete bought the grey one. That means Nick got the grey one. Since the grey, green and brown suits are all accounted for, the blue one must be Pete's.

Now, all we need to know is who paid the most! Ollie paid twice what Pete paid (sentence 3). This means that he also paid twice what Nick paid because Pete paid the same as the man who bought the grey suit (sentence 4) -- and Nick bought the grey suit. So the highest-payer can't be Nick or Pete; it must either be Ollie or Max. But sentence 2 says Max paid less than Nick. So the highest-payer must be Ollie, as proved by the facts given.

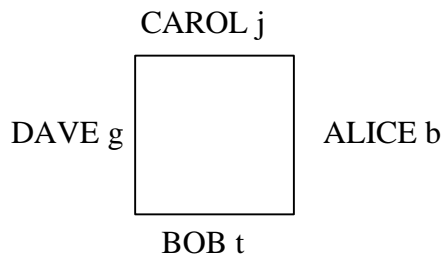
13. The answer is A. The man sitting on Dave's right (sentence 6) has to be Bob because he's the only other man in the group. Alice sits across from Dave (sentence 4). This means that Carol must be sitting across from Bob. From this information, you can draw a diagram of the table and the people seated at it:



Now all you need to know is whether Dave plays golf. It may help keep everything straight if you put the name of the sport next to the name of the proper person as you figure out each one. Here, we have abbreviated each sport using a lower-case initial ("j" for jogging, "g" for golf, and so on). Since Carol sits to the right of the basketball player (sentence 3), Alice must play basketball. (Remember, it's not Carol's right; it's the basketball player's right. This confuses some people.) Since Bob sits across from the jogger (sentence 2), Carol must jog. After adding this information, your diagram would look like this:



At this point, all you need to know is; Does Bob golf and Dave play tennis, or is it the other way around? A quick trial-and-error produces the answer. Sentence 5 says the golfer sits to the left of the tennis player. If Dave played tennis, would this be true? No. So, it must be Bob who's the tennis player, and Dave who's the golfer. The conclusion is thus proved by the facts. If you have spatial problems, you might want to twist the diagram around to see this more clearly.



14. The answer is C. To visualize this problem, it is helpful to draw a small chart, showing what we know about each woman's score.

NAME	SCORE
Carol	higher than Betty
Betty	higher than 40 (according to sentence 3 she scored more than twice as high as Alice)
Alice	20

From this chart, we can see that Carol's score could have been any number higher than 41. It could have been 50, or 65, or 92 -- in which case she would have scored high enough to be hired. But it also could have been 42, or 43, or 47 -- in which case she would not have scored high enough. So, we can't prove that Carol was offered the job, but we can't prove that she wasn't either. In addition, we can't prove that Carol was the only one who was offered the job. We know Alice didn't get an offer (with a score of 20), but we don't know about Betty. She could have gotten anything above 40. So, the facts here neither prove nor disprove the conclusion.

15. The answer is C. This is a sneaky little question. If you read it quickly, you might have thought it was easy. The cat didn't get rabies (sentence 3), so the cat had had its rabies shots within the last two years (sentence 2). But perhaps the cat didn't get rabies because the squirrel never bit it, or perhaps the squirrel never had rabies to begin with. The first sentence says, "If Camille's squirrel has rabies" and (if) the squirrel bites Casey's cat . . . the cat will get rabies." (The second "if" is implied by the structure of the sentence.) Nothing in this paragraph ever tells us that the squirrel had rabies or that the squirrel bit the cat. As we said -- sneaky. Since you don't know why the cat didn't get rabies, you can't prove that it was spared because it had had its shots, and you can't disprove it either. Therefore, C is the only possible answer.

16. The answer is C. This is another sneaky question. (The exams haven't used this kind of trick lately, but we wanted to give you practice -- just in case.) If you didn't read the problem carefully, you might have chosen B. You would have thought that Laura told Frank (sentence 4), who told Bill (sentence 2), who chose not to fire Sally (sentence 3). Since Sally didn't get fired, she didn't file a grievance (sentence 1). The only problem is that Laura told Fred, not Frank, and we have no way of knowing how Fred fits into this crew. He could have told Frank, thereby setting in motion the cycle above and preventing Sally from getting fired. In that case, the conclusion would be false. Or he could have not told anyone, Sally would have gotten fired, she would have filed a grievance, and the conclusion would have been true. You just don't know, so C is the only option.

17. The answer is C. Obviously, if the "pre-game" song gets delayed, the game will also be delayed, but we don't know for how long. We also don't know how late Barb had to work₁ (We know that she did have to work late, because of sentences 1, 51 and 6.) For all we know, the game may have been delayed for an hour due to the storm, and Barb may have had to work only a half hour later than usual -- thereby not missing any of the game at all. In questions of this type, it is always good to work backwards from the conclusion and try to see if there is a cause of that conclusion contained in the facts. In this case, although we can find a cause for Barb's having to work late (Alice's acceptance of Carl's invitation), we can find nothing that would necessarily cause Barb to miss the first inning of the game.

18. The answer is A. The conclusion seems likely because it only takes Eva five tries to guess a number from 1 through 10. The most efficient way to guess is to eliminate half of all possible numbers with each guess. When the number is from 1 through 10, the first question should be, "Is the number you're thinking of 6 or more?" The answer to that question, whether it's yes or no, will eliminate five numbers -- half of all the numbers Earl could possibly be thinking of. Let's say Earl said yes. The second question would be, "Is it 8 or more?" That answer will eliminate two or three of the five remaining possible numbers. No matter what range of numbers Earl wants to use, whether it be 1 through 50, 1 through 100, or whatever, Eva could use this method until she narrows the answers down to one possible number. (We can assume that she uses this method because sentence 2 says she is using the most efficient method.)

For the range 1 through 6, then, you can see that four is the highest number of guesses she will need using this system. The most she can be sure of eliminating with one guess is 3 numbers. ("Is the number you're thinking of 4 or more?") At that point, she may need as many as three more guesses to eliminate the two remaining wrong numbers one by one and then to "guess" the right number. Since this is four guesses, the facts prove the conclusion.

19. The answer is C. Here is a case in which it is clear that certain facts are missing. You know from sentences 4 and 2 that Robbie is home in time for Lois to make dinner, but what about Ted and Jennifer? Nowhere in the facts does it say whether or not Ted played softball after work. Since sentence 1 says Lois will cook only if all three are home by 6 p.m., we simply don't have enough information to either prove or disprove the conclusion.

20. The answer is A. Unless you are excellent in math, just about the only way to figure this one out is to set up a grid showing the amount of money each player has after each round. After setting up such a grid, the answer can be found quite easily.

	ARTIE	BRUCE	CHUCK
	\$10	\$10	\$10
AFTER ROUND: #1	\$8	\$8	\$14
#2	\$6	\$12	\$12
#3	\$4	\$10	\$16
#4	\$17	\$5	\$8

Chuck won the first round (sentence 4). Since everyone started with \$10 (sentence 1), you can see that after Round #1, each loser would be out \$2 (sentences 2 and 3), bringing their totals down to \$8 each. Chuck, on the other hand, would be up to \$14, having collected \$2 from each of the two losers. The second line of the grid shows the situation after Round #2, which was won by Bruce (sentence 4). The third line shows the situation after Round #3, when Chuck is way ahead (sentence 4). Likewise, the fourth line shows the situation after Round #4, when the rules had been changed and Artie won (sentences 5 and 6). Since each of the other two had to give him half their money (sentence 5), he collected \$5 from Bruce and \$8 from Chuck. His total of \$17 was \$9 more than Chuck had at that point. So, the conclusion that Artie ended up with more money than Chuck is proven by the facts given.

21. The answer is B. The facts prove just the opposite of the conclusion. If all cleaners work part-time (sentence 2), and no part-timers get paid vacations (sentence 1), then no cleaners can get paid vacations. Where "facts" are given in the form, "No A are B, and all C are A," you can simply substitute C for A, and that will prove that no C are B. (This is much like question 3, except the first fact is all-exclusive rather than all-inclusive. It excludes rather than includes all of something. See the explanation to question 3, if this is not clear.) In this case, "A" is the part-timers, "B" represents recipients of paid vacations, and "C" is "cleaners." The facts disprove the conclusion. Since we don't know what Joe's occupation is, sentence 3 is irrelevant to this problem.

22. The answer is C. In this case, no amount of "following the trail" of facts will lead you to the conclusion given because there is no trail. No fact implies, or leads to, any other; they are simply a collection of statements with no relationship to one another. The facts neither prove nor disprove the conclusion.

23. The answer is A. Unlike question 22, this question lends itself to "following the trail" of facts. As we've noticed earlier, a good place to begin the trail is with the last fact. It follows from sentence 5 (Dick cleans the house) that Sally goes to the store (sentence 3), which means that Tina also goes to the store (sentence 4). This, in turn, means that Ike goes (sentence 1), and buys the doughnuts (sentence 2). The facts here prove the conclusion.

24. The answer is A. To decide whether the facts prove the conclusion, you must understand what each fact means. The fact that Joe passed the test (sentence 4) means that Jill didn't apply for the job (sentence 1). Knowing this, all you have to do is reread sentence 3 to see that Jeanne does, indeed, get annoyed. Sentence 2 is not needed to solve this problem, although it may explain why Jeanne got annoyed.

25. The answer is B. It is helpful to make a list of who's using the machine when, and to fill in the facts you're given. Then you can gradually deduce more information, until you can see whether the conclusion is proved, disproved, or neither. Sentence 2 says Debbie goes first, so your list, at the start, would look something like this:

First	--	Debbie
Second	--	?
Third	--	?
Last	--	?

It is clear from sentences 3 and 5 that Joan immediately follows May. This also means that Joan cannot be second, May cannot be last, and Mary cannot be third. You may then wish to enter the possibilities to your list:

First	--	Debbie
Second	--	May or Mary
Third	--	May or Joan
Last	--	Joan or Mary

Now, all we need to know is: Does May go second? If so, the conclusion is proved by the facts; if not, it's disproved. We know from sentence 4 that the person with the most work goes second. That person can't be May, however, because May has been waiting longest (sentence 5), and the longest-waiter is not the person with the most work (sentence 6). So, Debbie is first, Mary is second, May is third, Joan is fourth, and the conclusion is disproved.

First	--	Debbie
Second	--	Mary
Third	--	May
Last	--	Joan

Congratulations, you've finished this section. You may want to review some of the more difficult questions, or use them to torture your friends. By having to explain the answers to them, or vice versa, you will be reinforcing what you've learned. Remember, we've included a larger proportion of difficult questions than you would get on the exam, so don't be discouraged.

Thank you and good luck!