

STUDENT COPY

IBA

Name :

Batch:

ANALYTICAL LECTURE - 6

MIXED PRACTICE

MENTORS[™]
education • study abroad

1. Manufacturers of household appliances in the United States are introducing an array of computerized technologies in the work of many of their factories in an effort to regain a lead eroded by international competition. On the basis of changes that have already taken place, experts predict a golden age for the consumer of better-designed and better-built products.

Which of the following, if true, would LEAST support the experts' claim that appliances produced by computerized technologies will be better built?

- (A) Computerized inventory procedures ensure that parts are ordered in sufficient quantities and that production moves smoothly and consistently.
 - (B) Computer directed machines carry out repetitive tasks with the result that errors due to human fatigue are eliminated.
 - (C) Computer controlled ultrasound devices are better able to detect hidden flaws and defects that require repair than are human inspectors.
 - (D) The flow of heat used to weld parts together is more consistent when directed by computer programs and results in a more accurate and uniform weld.
 - (E) Computer driven screwdrivers ensure that screws used in appliances will be consistently tight.
2. Although computers can enhance people's ability to communicate, computer games are a cause of underdeveloped communication skills in children. Afterschool hours spent playing computer games are hours not spent talking with people. Therefore, children who spend all their spare time playing these games have less experience in interpersonal communication than other children have.

The argument depends on which of the following assumptions?

- (A) Passive activities such as watching television and listening to music do not hinder the development of communication skills in children.
 - (B) Most children have other opportunities, in addition to after-school hours, in which they can choose whether to play computer games or to interact with other people.
 - (C) Children who do not spend all of their afterschool hours playing computer games spend at least some of that time talking with other people.
 - (D) Formal instruction contributes little or nothing to children's acquisition of communication skills.
 - (E) The mental skills developed through playing computer games do not contribute significantly to children's intellectual development.
3. Nadif and Faiza took five courses together but achieved the same grade in only one of the courses – History. Each course was graded on a scale ranging from 60 to 100.

Which of the following statements allows one to determine whether the average of the grades Nadif achieved in the five courses was higher than the average of the grades Faiza achieved in those courses?

- (A) Nadif's lowest grade was in History, but Faiza's lowest grade was in Math.
- (B) Faiza's highest grade was higher than Nadif's highest grade.
- (C) Nadif achieved higher grades than Faiza in three courses.
- (D) Nadif's lowest grade and Faiza's highest grade were the same.
- (E) Faiza's lowest grade and Nadif's highest grade were for the same course.

4. Plant Y thrives in environments of great sunlight and very little moisture. Desert X is an environment with constant, powerful sunlight, and next to no moisture. Although Plant Y thrives in the areas surrounding Desert X, it does not exist naturally in the desert, nor does it survive long when introduced there.

Which of the following would be most useful in explaining the apparent discrepancy above?

- (A) Desert X's climate is far too harsh for the animals that normally feed on Plant Y.
- (B) For one week in the fall, Desert X gets consistent rainfall.
- (C) The environment around Desert X is ideally suited to the needs of Plant Y.
- (D) Due to the lack of sufficient moisture, Desert X can support almost no plant life.
- (E) Plant Y cannot survive in temperatures as high as those normally found in Desert X.

Data Sufficiency Problems (Questions 5 – 9)

5. If 2 different representatives are to be selected at random from a group of 10 employees and if p is the probability that both representatives selected will be women, is $p > 0.5$?

- (1) More than half of the employees are women
- (2) The probability that both representatives selected will be men is less than 0.1

6. Is $x^7y^2z^3 > 0$?

- (1) $yz < 0$
- (2) $xz > 0$

7. In triangle ABC, point X is the midpoint of side AC and point Y is the midpoint of side BC. If point R is the midpoint of line segment XC and if point S is the midpoint of line segment YC, what is the area of triangular region RCS ?

- (1) The area of triangular region ABX is 32.
- (2) The length of one of the altitudes of triangle ABC is 8.

8. The town A and B lie on a straight line. C is between A and B. The distance between A and B is 100 km. How far is A from C?

- (1) The distance between A and B is 25% more than the distance from C to B.
- (2) The distance from A to C is $\frac{1}{4}$ of the distance from C to B.

9. In a group of 80 college students, how many own a car?

- (1) Of the students who do not own a car, 14 are male.
- (2) Of the students who own a car, 42% are female.

Questions 10 – 16:

Five patients - L, M, N, O, and P - must be scheduled to undergo physical therapy treatments within a seven-day period beginning on the first day of a month and ending on the seventh day of the same month. Exactly one patient can be treated per day. The schedule must accommodate the following conditions:

L is to receive exactly two treatments; the second treatment must be scheduled for the fourth day after the day of the first treatment.

M is to receive exactly one treatment.

N is to receive exactly one treatment, which must be scheduled for either the day before or the day after the day of L's first treatment.

O is to receive exactly one treatment, which must be scheduled for a day anytime before the day of L's second treatment.

P is to receive exactly one treatment, which must be scheduled for the third day after the day of M's treatment.

10. Any of the five patients could be scheduled for the first day of the month except:

- (A) L (B) M (C) N (D) O (E) P

11. Which of the following is a possible schedule, including the open day for which no patient is scheduled, from the first day through the seventh day of the month?

- (A) L, M, N, O, L, P, open day
(B) M, L, N, P, open day, L, O
(C) N, L, M, O, P, L, open day
(D) N, L, O, M, open day, L, P
(E) Open day, L, M, O, L, N, P

12. The day of M's treatment must be no more than how many days after L's first treatment? (A) 1 (B) 2 (C) 3 (D) 4 (E) 5

13. N could be scheduled for any of the following days except the

- (A) first (B) second (C) third (D) fourth (E) fifth

14. If M is to be scheduled for the first day of the month, which of the following pairs of patients cannot be scheduled for consecutive days?

- (A) L and P (B) M and L (C) M and N (D) N and O (E) N and P

15. If no patient is to be scheduled for the first of the month, which of the following could be true?

- (A) M is scheduled for the day before the day of L's first treatment.
(B) N is scheduled for the day before the day of L's first treatment.
(C) O is scheduled for the day before the day of L's first treatment.
(D) P is scheduled for the day before the day of L's second treatment.
(E) P is scheduled for the day after the day of O's treatment.

16. If N is scheduled for the day before the day of L's first treatment, the days for which M's treatment can be scheduled include the

- (A) first day and second day.
(B) first day and fourth day.
(C) second day and third day.
(D) second day and fourth day.
(E) third day and fourth day.

17. **Employee complaint:** There are not enough parking spaces in the employee parking lot to accommodate all the people who work here.

Employer's Response: The complaint is not true. No one who gets to work on time has trouble finding a parking space. Only if you are late to work are you unlikely to be able to find a space.

Which of the following, if true, gives the reason why the employer's response fails to address the substance of the issue raised in the complaint?

- (A) Each employee does not drive his or her own car to work.
- (B) The employer is not obligated to provide parking spaces for all employees.
- (C) On days when all employees arrived at work on time, there would be insufficient parking spaces.
- (D) On days when a large number of employees were late to work, many of the latecomers would be able to find parking spaces.
- (E) The number of employees who come to work each day is not always the same.

18. To reduce productivity losses from employees calling in sick, Corporation X implemented a new policy requiring employees to come into work unless they were so sick that they had to go to a doctor. But a year after the policy was implemented, a study found that Corporation X's overall productivity losses due to reported employee illnesses had increased.

Which of the following, if true, would best explain why the policy produced the reverse of its intended effect?

- (A) After the policy was implemented, employees more frequently went to the doctor when they felt sick.
- (B) Before the policy was implemented, employees who were not sick at all often called in sick.
- (C) Employees coming into work when sick often infect many of their coworkers.
- (D) Unusually few employees became genuinely sick during the year after the policy was implemented.
- (E) There are many other factors besides employee illness that can adversely affect productivity.

19. Rajshahi has one of the lowest motor vehicle fatality rates in the country, and it is one of the few cities that require extensive annual automobile safety inspections. Therefore, all states should adopt similar safety inspection procedures.

The argument above is based on which of the following assumptions?

- (A) Most cities tend to impose few rules and regulations on the automobile drivers operating within those cities.
- (B) Most cities are skeptical that annual automobile safety inspections can reduce fatality rates.
- (C) Annual automobile safety inspections contribute significantly to holding down Rajshahi's fatality rate.
- (D) Drivers in Rajshahi are more safety conscious than are drivers in other parts of the country.
- (E) A smaller number of people die on the roads in Rajshahi than in most other cities.

20. **Wine Company Representative:** The corks of red wine bottles pose a threat to the environment because they are treated with chemicals that are especially toxic in landfills. However, the new cork that our company developed, which will be adopted by the entire red wine industry, represents a solution. Since the new cork is natural and not treated with chemicals, when the industry completes its transition to the new cork, there will no longer be any threat to landfills from red wine corks.

Which of the following, if true, most weakens the argument above?

- (A) The industry's transition to the new red wine corks will take years, allowing thousands of old corks to pollute landfills.
- (B) Even after the industry's transition to new corks, a large number of wine bottles with old corks will continue to be consumed.
- (C) The new corks take considerably longer to produce.
- (D) Production of the new cork emits more toxic fumes than were emitted in the production of the old cork.
- (E) The new corks are more expensive than the old corks.

Questions 21 – 25:

A map representing countries R, S, W, X, Y, and Z is to be drawn. Adjacent countries cannot be the same color on the map. The only countries adjacent to each other are as follows:

- R, S, X, and Y are each adjacent to W.
- X is adjacent to Y.
- R and S are each adjacent to Z.

21. Which of the following is a pair of countries that must be different in color from each other?
(A) R and X (B) S and X (C) S and Z (D) X and Z (E) Y and Z

22. If X is the same color as Z, then it must be true that
(A) R is the same color as Y.
(B) S is the same color as X.
(C) X is the same color as Y.
(D) S is a different color from any other country.
(E) W is a different color from any other country.

23. Which of the following is a pair of countries that can be the same color as each other?
(A) R and S (B) S and W (C) W and X (D) W and Y (E) X and Y

24. Which of the following countries can be the same color as W?
(A) R (B) S (C) X (D) Y (E) Z

25. If the fewest possible colors are used and one of the countries is the only one of a certain color, that country could be
(A) W, but not any of the other countries
(B) Z, but not any of the other countries
(C) R or S, but not any of the other countries
(D) W or X or Y, but not any of the other countries
(F) W or Y or Z, but not any of the other countries

Data Sufficiency Questions 26 – 30

26. At a restaurant, a group of friends ordered four main dishes and three side dishes at a total cost of \$89. The prices of the seven items, in dollars, were all different integers, and every main dish cost more than every side dish. What was the price, in dollars, of the most expensive side dish?
- (1) The most expensive main dish cost \$16.
 - (2) The least expensive side dish cost \$9.
27. At Western Springs School there are 150 total students who play either tennis, soccer, or both. Are there more students who play soccer than who play tennis?
- (1) 50 students don't play soccer.
 - (2) 80 students don't play tennis.
28. When a positive integer 'x' is divided by a divisor 'd', the remainder is 24. What is d?
- (1) When $2x$ is divided by d , the remainder is 23.
 - (2) When $3x$ is divided by d , the remainder is 22.
29. How many of the numbers x , y , and z are positive if each of these numbers is less than 10?
- (1) $x + y + z = 20$
 - (2) $x + y = 14$
30. Is the two-digit positive integer m a prime number?
- (1) $(m + 2)$ and $(m - 2)$ are prime.
 - (2) $(m - 4)$ and $(m + 4)$ are prime.