

Quantitative:

In a certain downtown office, 40% of the workers are men and 60% are women. Of the male workers, 30% drive to work and the rest take the train, while all of the female workers drive to work. What percentage of all the workers take the train to work?

- a. 18%
- b. 28%
- c. 42%
- d. 56%
- e. 70%

If  $x^2 = 2y^3$  and  $2y = 4$ , what is the value of  $x^2 + y$ ?

- a. -14
- b. -2
- c. 3
- d. 6
- e. 18

If  $y = 4 + (x-3)^2$ , then  $y$  is least when  $x =$

- a. 14
- b. 13
- c. 0
- d. 3
- e. 4

A box contains 100 balls, numbered from 1 to 100. If 3 balls are selected at random and with replacement from the box, what is the probability that the sum of the three numbers on the balls selected from the box will be odd?

- a.  $\frac{1}{8}$
- b.  $\frac{3}{8}$
- c.  $\frac{1}{2}$
- d.  $\frac{5}{8}$
- e.  $\frac{3}{4}$

Of the 3,600 employees of the company  $x$ ,  $\frac{1}{3}$  are clerical. If the clerical staff were to be reduced by  $\frac{1}{3}$ , what percentage of the total number of the remaining employees would then be clerical?

- a. 25%
- b. 22.2%
- c. 20%
- d. 12.5%
- e. 11.1%

If the positive number  $d$  is the standard deviation of  $n$ ,  $k$ , and  $p$ , then the standard deviation of  $n+1$ ,  $k+1$ ,  $p+1$  is

- a.  $d+3$
- b.  $d+1$
- c.  $6d$
- d.  $3d$
- e.  $d$

7. If a town of 25,000 people is growing at a rate of approximately 1 percent per year, the population of the town in 5 years will be closest to

- a. 26,000
- b. 27,000
- c. 28,000
- d. 29,000
- e. 30,000

8. Which of the following is 30 percent of  $\frac{1}{5}$ ?

- a. 0.06
- b. 0.15
- c. 0.16
- d. 0.35
- e. 0.60

9. If  $x$  is the sum of the first 50 positive even integers and  $y$  is the sum of the first 50 positive odd integers, what is the value of  $x-y$ ?

- a. 0
- b. 25
- c. 50
- d. 75
- e. 100

10. June 25, 1982, fell on a Friday. On which day of the week did June 25, 1987 fall? (Note: 1984 was a leap year.)

- a. Sunday
- b. Monday
- c. Tuesday
- d. Wednesday
- e. Thursday

Verbal:

1. The financial crash of October 1987 demonstrate that the world's capital markets are integrated more closely than ever before and events in one part of the global village may be transmitted to the rest of the village- almost instantaneously.

- a. Integrated more closely than ever before and
- b. Closely integrated more than ever before so
- c. More closely integrated as never before while

- d. More closely integrated than ever before and that
- e. More than ever before closely integrated as
2. The rain has flooded drainage canals in many orange-tree groves, which has caused the fruits to fall before it will ripen and also threatened to kill the trees.
- a. Which has caused the fruits before it will ripen and also threatened to kill
- b. Which not only caused the fruits to fall before ripening, but also threatened killing
- c. Not only causing the fruit to fall before ripening, but also threatening to kill
- d. Causing the fruit to fall before it will ripen, which will threaten killing
- e. Causing the fruit to have fallen before it ripened, which threatened to kill
3. In Alexandria, the Ptolemys founded a library so as the written remains of Greek literature could be gathered together and systematized.
- a. So as
- b. In which
- c. And
- d. Whereby
- e. By which
4. If the proposed expenditures for gathering information abroad are reduced even further, international news reports have been and will continue to diminish in number and quality.
- a. Have been and will continue to diminish
- b. Have and will continue to diminish
- c. Will continue to diminish, as they already did,
- d. Will continue to diminish, as they have already,
- e. Will continue to diminish
5. Restorers say that if allowed to remove and replace the discolored layer of varnish on the Mona Lisa, the colors Leonardo da Vinci painted nearly five hundred years ago will once again shine through.
- a. If
- b. If it is
- c. If they are
- d. When
- e. When it is
6. Naked mole rats form colonies of approximately twenty animals, each of which consists of a single reproductive female and workers that defend her.
- a. Each of which consists

- b. With each of them consisting
- c. Each colony consisting
- d. And each of them consist
- e. And each colony consisting
7. While larger banks can afford to maintain the data-processing operations, many smaller regional and community banks are finding that the costs associated with upgrading data-processing equipment and with the development and maintenance of new products and technical staff are prohibitive.
- a. Cost associated with
- b. Costs associated with
- c. Costs arising from
- d. Cost of
- e. Costs of
8. The infant mortality rate has decreased steadily over the past several decades and is now at a lower rate than ever before.
- a. Now at a lower rate than
- b. Now lower than
- c. Now a lower rate than
- d. Presently lower than it was
- e. Presently lower than the rate was
9. The golden crab of the Gulf of Mexico has not been fished commercially in great numbers, primarily on account of living at great depths—2,500 to 3,000 feet down.
- a. On account of living
- b. On account of their living
- c. Because it lives
- d. Because of living
- e. Being they live
10. Nineteenth-century doctors thought that alcohol, when ingested, passed through the stomach into the bloodstream and was broken down only by the liver; recent studies, however, have led them to conclude that the stomach breaks down up to 20 percent of ingested alcohol before it reached the liver.
- a. Have led them to conclude
- b. Have led to their conclusion
- c. Have led doctors to conclude
- d. Lead to doctors concluding
- e. Lead to the doctors' conclusion

## Integrated Reasoning:

1. Researcher: Soils are adversely affected by road salts used to melt ice and snow, particularly along roadsides and storage areas. Soil samples were collected from highway medians and in salt storage yards. These samples showed chloride levels 11–160 times the level sufficient to inhibit bacteria growth in soil. The samples also had sodium levels 15–200 times the level sufficient to inhibit bacterial growth in soil. Inhibited bacterial growth in soil greatly inhibits plant growth in that soil.

An agriculture official would like to use the researcher's results to support the argument that sand, rather than road salts, should be used as a winter road treatment, thereby eliminating the need for salt yards. Select the additional information that, if true, would most strengthen the official's case.

- A high number of road accidents are attributable to untreated roads in winter.
  - The cost of removing salts from soil in abandoned salt yards is high.
  - High chloride concentrations in drinking water supplies have a negative impact on health.
  - Sand is much less effective than salt at making roads safe to drive in winter conditions.
  - Runoff from roads is often absorbed by farmland.
2. Javier rates his work-readiness on a scale from 0 to 10 points, with 10 being maximum readiness. He wants his rating to be as high as possible when he arrives at his office and has found that the rating is affected by how late he sleeps and how long he spends preparing for work. His alarm clock sounds at 6 a.m., at which time he has a work-readiness rating of 10. He needs to leave for work at exactly 6:40 a.m. During these 40 minutes, Javier's only activities are sleeping or preparing for work.

If Javier spends more than 25 minutes or less than 10 minutes to prepare, his rating is reduced by 5 points. To sleep past 6 a.m., however, Javier must use the snooze button on his alarm clock, which delays the alarm by 4 minutes. Each press of the snooze button after the third will decrease Javier's efficiency rating by 1 point.

Select the greatest work-readiness rating that Javier can achieve.

- 3
- 5
- 7
- 8
- 9

3. The following excerpt from a fictitious science news report discusses a fictitious type of location called a morefa.

For zoologists studying the behavior of certain species of birds, the critical importance of observing the birds in those species' morefa during the annual breeding season is obvious. Such observation allows researchers to study not only the courtship displays of many different individuals within a species, but also the species' social hierarchy. Moreover, since some species repeatedly return to the same morefa, researchers can study changes in group dynamics from year to year. The value of observing a morefa when the birds are not present, however—such as prior to their arrival or after they have abandoned the area to establish their nests—is only now becoming apparent.

Based on the definition of the imaginary word *morefa* that can be inferred from the previous paragraph, which of the following activities of a bird species must happen in a location for that location to be the species' morefa.