|  |
| --- |
| **Multiple Choice** |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. A psychologist wants to know if adults with normal vision can be fooled by a certain optical illusion. She recruits 50 students from her PSY 120 class and finds that 42 of them are fooled by the illusion. The population in this study is

|  |  |  |
| --- | --- | --- |
|   | a.  | the 42 students who were fooled. |
|   | b.  | the 50 students who served as subjects. |
|   | c.  | all students in the PSY 120 class. |
|   | d.  | all adults with normal vision. |

|  |  |
| --- | --- |
| *ANSWER:* | d |

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| 2. When we take a census, we attempt to collect data from

|  |  |  |
| --- | --- | --- |
|   | a.  | a stratified random sample. |
|   | b.  | every individual selected in a simple random sample. |
|   | c.  | every individual in the population. |
|   | d.  | a voluntary response sample. |
|   | e.  | a convenience sample. |

|  |  |
| --- | --- |
| *ANSWER:* | c |

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 3. A 2016 national sample survey interviewed 1012 people aged 18 and older, nationwide, by telephone. One question asked was, "We'd like you to imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose the top of the ladder represents the best possible situation for our country and the bottom represents the worst possible situation. Please tell me the number of the step on which you think the United States stands at the present time." The population for this sample survey appears to be

|  |  |  |
| --- | --- | --- |
|   | a.  | the 1012 people who were interviewed. |
|   | b.  | all registered voters. |
|   | c.  | all adult residents of the United States. |
|   | d.  | people who think the United States is at the best possible situation. |
|   | e.  | all U.S. citizens. |

|  |  |
| --- | --- |
| *ANSWER:* | c |

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| --- |
| You want to know the opinions of American school teachers about establishing a national test for high school graduation. You obtain a list of the members of the National Education Association (the largest teachers union) and mail a questionnaire to 2500 teachers chosen at random from this list. In all, 1347 teachers return the questionnaire.​ |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4. In this situation, the *population* is

|  |  |  |
| --- | --- | --- |
|   | a.  | the 1347 teachers who mail back the questionnaire. |
|   | b.  | the 2500 teachers to whom you mailed the questionnaire. |
|   | c.  | all members of the National Education Association. |
|   | d.  | all American school teachers. |
|   | e.  | all American school students. |

|  |  |
| --- | --- |
| *ANSWER:* | d |

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5. The *sample* is

|  |  |  |
| --- | --- | --- |
|   | a.  | the 1347 teachers who mail back the questionnaire. |
|   | b.  | the 2500 teachers to whom you mailed the questionnaire. |
|   | c.  | all members of the National Education Association. |
|   | d.  | all American school teachers. |
|   | e.  | all American school students. |

|  |  |
| --- | --- |
| *ANSWER:* | a |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 6. You measure the age (years), weight (pounds), and marital status (single, married, divorced, or widowed) of 1400 women. How many variables did you measure?

|  |  |  |
| --- | --- | --- |
|   | a.  | 1400 |
|   | b.  | One |
|   | c.  | Two |
|   | d.  | Three |
|   | e.  | 1403 |

|  |  |
| --- | --- |
| *ANSWER:* | d |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 7. In a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_, the environments of the subjects are controlled or manipulated by the researcher.

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| --- | --- | --- |
|   | a.  | census |
|   | b.  | experiment |
|   | c.  | observational study |
|   | d.  | sample survey |

|  |  |
| --- | --- |
| *ANSWER:* | b |

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| 8. A Pew Research Council Poll recently showed that 23 percent of Americans are religiously unaffiliated. The poll contacted 35,071 adults by telephone. The margin of sampling error was plus or minus 0.6 (six-tenths) of a percentage point. Assume a 95 percent confidence level and no bias. The population for this sample survey is

|  |  |  |
| --- | --- | --- |
|   | a.  | all adult residents of the United States. |
|   | b.  | the 35,071 people who answered the question. |
|   | c.  | all households in the United States. |
|   | d.  | the 23 percent who said that they were religiously unaffiliated. |

|  |  |
| --- | --- |
| *ANSWER:* | a |

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| --- |
| The General Social Survey (GSS), conducted by the National Opinion Research Center at the University of Chicago, is a major source of data on social attitudes in the United States. Once each year, 1500 adults are interviewed in their homes all across the country. The subjects are asked their opinions about sex and marriage, attitudes toward women, welfare, foreign policy, and many other issues.​ |

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| 9. The GSS is an example of

|  |  |  |
| --- | --- | --- |
|   | a.  | anecdotal information. |
|   | b.  | using available data. |
|   | c.  | a sample survey. |
|   | d.  | an experiment. |

|  |  |
| --- | --- |
| *ANSWER:* | c |

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| 10. The questions on the GSS are considered

|  |  |  |
| --- | --- | --- |
|   | a.  | samples. |
|   | b.  | variables. |
|   | c.  | individuals. |
|   | d.  | populations. |

|  |  |
| --- | --- |
| *ANSWER:* | b |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 11. The population for the GSS is

|  |  |  |
| --- | --- | --- |
|   | a.  | all adult residents of the United States. |
|   | b.  | the University of Chicago. |
|   | c.  | the 1500 persons interviewed. |
|   | d.  | the list of questions asked. |

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| --- | --- |
| *ANSWER:* | a |

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| 12. The essential difference between an experiment and an observational study is that

|  |  |  |
| --- | --- | --- |
|   | a.  | observational studies always involve large numbers of subjects, but experiments never do. |
|   | b.  | in an experiment, information is gathered only on animals or things, but in an observational study, only information about people is gathered. |
|   | c.  | an observational study imposes treatments on the subjects, but an experiment does not. |
|   | d.  | observational studies cannot have variables. |
|   | e.  | an experiment imposes treatments on the subjects, but an observational study does not. |

|  |  |
| --- | --- |
| *ANSWER:* | e |

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| 13. A Gallup Poll asked 1022 randomly chosen adults whether the failure of the government to solve major challenges facing the country was a "crisis," a "major problem," a "minor problem," or "not a problem." The proportions giving each response were 30 percent, 51 percent, 14 percent, and 4 percent, respectively (percents don't add to 100 due to rounding error). The sample for this poll is

|  |  |  |
| --- | --- | --- |
|   | a.  | all adults. |
|   | b.  | the 1022 respondents. |
|   | c.  | government workers. |
|   | d.  | those responding "crisis." |

|  |  |
| --- | --- |
| *ANSWER:* | b |

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| --- |
| An editorial writer for the *East Mule Shoe Gazette* wants to measure public support for a discontinued construction project that has left a city-block-size hole in the middle of the East Mule Shoe downtown area, so one day he uses his lunch hour to walk down the block adjacent to the project and interviews the first 25 people who will talk to him about it.​ |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 14. The *sample* for this survey is

|  |  |  |
| --- | --- | --- |
|   | a.  | all residents of East Mule Shoe. |
|   | b.  | all newspaper readers. |
|   | c.  | all people downtown the day the survey was conducted. |
|   | d.  | the 25 people who gave the editorial writer their opinion. |
|   | e.  | all American adults. |

|  |  |
| --- | --- |
| *ANSWER:* | d |

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 15. The *population* for the survey is

|  |  |  |
| --- | --- | --- |
|   | a.  | all residents of East Mule Shoe. |
|   | b.  | all newspaper readers. |
|   | c.  | all people downtown the day the survey was conducted. |
|   | d.  | the 25 people who gave the editorial writer their opinion. |
|   | e.  | all American adults. |

|  |  |
| --- | --- |
| *ANSWER:* | a |

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| --- |
| Can pleasant aromas help people work more efficiently? Researchers did this study to find out. Twenty-two students worked a paper-and-pencil maze six times. On three tries, they wore a mask with floral scents. On the other three tries, they wore a mask with no scent. The six tries were done in random order and each used a different maze. The researchers found that the subjects took less time to complete the maze when wearing the scented mask.​ |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 16. This study is a(n)

|  |  |  |
| --- | --- | --- |
|   | a.  | experiment. |
|   | b.  | observational study. |
|   | c.  | sample survey. |
|   | d.  | census. |
|   | e.  | population. |

|  |  |
| --- | --- |
| *ANSWER:* | a |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 17. The *population* for this study is

|  |  |  |
| --- | --- | --- |
|   | a.  | 22 students. |
|   | b.  | masks. |
|   | c.  | scents. |
|   | d.  | people. |
|   | e.  | maze time. |

|  |  |
| --- | --- |
| *ANSWER:* | d |

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 18. The *response variable* for this study is

|  |  |  |
| --- | --- | --- |
|   | a.  | 22 students. |
|   | b.  | type of scent on mask. |
|   | c.  | time to complete maze. |
|   | d.  | order of tries. |

|  |  |
| --- | --- |
| *ANSWER:* | c |

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 19. A recent survey of 35,101 randomly selected U.S. adults studied the religious affiliation of Americans. The sample for this survey is

|  |  |  |
| --- | --- | --- |
|   | a.  | religious affiliation. |
|   | b.  | the 35,101 people questioned. |
|   | c.  | all adults with telephones. |
|   | d.  | all U.S. adults. |

|  |  |
| --- | --- |
| *ANSWER:* | b |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 20. In a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_, all subjects of the population are studied.

|  |  |  |
| --- | --- | --- |
|   | a.  | census |
|   | b.  | experiment |
|   | c.  | observational study |
|   | d.  | sample survey |

|  |  |
| --- | --- |
| *ANSWER:* | a |

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 21. A(n) \_\_\_\_\_\_\_\_\_\_\_\_\_ is a subset of subjects from the population.

|  |  |  |
| --- | --- | --- |
|   | a.  | census |
|   | b.  | sample |
|   | c.  | individual |
|   | d.  | population |

|  |  |
| --- | --- |
| *ANSWER:* | b |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 22. A(n) \_\_\_\_\_\_\_\_\_\_\_\_\_ is the entire collection of subjects about which we would like information.

|  |  |  |
| --- | --- | --- |
|   | a.  | census |
|   | b.  | sample |
|   | c.  | individual |
|   | d.  | population |

|  |  |
| --- | --- |
| *ANSWER:* | d |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 23. A(n) \_\_\_\_\_\_\_\_\_\_\_\_\_ is a single subject or object to be measured or studied.

|  |  |  |
| --- | --- | --- |
|   | a.  | census |
|   | b.  | sample |
|   | c.  | individual |
|   | d.  | population |

|  |  |
| --- | --- |
| *ANSWER:* | c |

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| --- |
| The administration of Virginia Commonwealth University (VCU) has been asked to extend the Drop/Add Period to two weeks (instead of the current one-week period). VCU will do so if it is convinced that more than half of the student body is in favor of this change. Of the 1500 students surveyed, 803 are in favor of extending the Drop/Add Period as proposed.​ |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 24. The study is a(n)

|  |  |  |
| --- | --- | --- |
|   | a.  | experiment. |
|   | b.  | sample survey. |
|   | c.  | census. |
|   | d.  | population. |

|  |  |
| --- | --- |
| *ANSWER:* | b |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 25. The *population* for this study is

|  |  |  |
| --- | --- | --- |
|   | a.  | 1500 VCU students. |
|   | b.  | all VCU students. |
|   | c.  | more than half of VCU students. |
|   | d.  | the VCU administration. |

|  |  |
| --- | --- |
| *ANSWER:* | b |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 26. The *response variable* for this study is

|  |  |  |
| --- | --- | --- |
|   | a.  | 1500 VCU students. |
|   | b.  | 803 VCU students. |
|   | c.  | number of classes surveyed. |
|   | d.  | opinion toward proposed change. |

|  |  |
| --- | --- |
| *ANSWER:* | d |

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| --- |
| In the weeks immediately following Supreme Court Associate Justice Antonin Scalia's death, much focus was on the conflict between President Obama's suggestion that he must fill the position and the Republican-led Senate Judiciary Committee's resistance to his doing so. At this time, a Pew Research Poll of 1002 adults found that a majority of Americans (56 percent) said that the Senate should hold hearings and vote on President Obama's choice to fill the vacancy.​ |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 27. This study is a(n)

|  |  |  |
| --- | --- | --- |
|   | a.  | observational study. |
|   | b.  | experiment. |
|   | c.  | sample survey. |
|   | d.  | population. |

|  |  |
| --- | --- |
| *ANSWER:* | c |

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 28. The *population* for this study is

|  |  |  |
| --- | --- | --- |
|   | a.  | all people. |
|   | b.  | all American adults. |
|   | c.  | all senators. |
|   | d.  | 1002 adults. |

|  |  |
| --- | --- |
| *ANSWER:* | b |

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 29. The *sample* for this study is

|  |  |  |
| --- | --- | --- |
|   | a.  | all people. |
|   | b.  | all American adults. |
|   | c.  | all senators. |
|   | d.  | 1002 adults. |

|  |  |
| --- | --- |
| *ANSWER:* | d |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 30. The *response variable* for this study is

|  |  |  |
| --- | --- | --- |
|   | a.  | political affiliation. |
|   | b.  | opinion about Senate obligation to hold confirmation hearings. |
|   | c.  | 560 adults. |
|   | d.  | 1002 adults. |

|  |  |
| --- | --- |
| *ANSWER:* | b |

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|  |
| --- |
| Americans Rank Occupations by Level Ethical Standards:A recent Gallup Poll asked 4045 randomly chosen American adults to rate the ethical standards of 45 occupations. Nurses were at the top, with 73% of the poll respondents rating them very high.​ |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31. This study is a(n)

|  |  |  |
| --- | --- | --- |
|   | a.  | observational study. |
|   | b.  | experiment. |
|   | c.  | sample survey. |
|   | d.  | population. |

|  |  |
| --- | --- |
| *ANSWER:* | c |

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 32. The *population* for this study is

|  |  |  |
| --- | --- | --- |
|   | a.  | all people. |
|   | b.  | all American adults. |
|   | c.  | all nurses. |
|   | d.  | 4045 American adults. |

|  |  |
| --- | --- |
| *ANSWER:* | b |

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 33. The *sample* for this study is

|  |  |  |
| --- | --- | --- |
|   | a.  | all people. |
|   | b.  | all American adults. |
|   | c.  | all nurses. |
|   | d.  | 4045 American adults. |

|  |  |
| --- | --- |
| *ANSWER:* | d |

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 34. The *response variable* for this study is

|  |  |  |
| --- | --- | --- |
|   | a.  | 45 occupations. |
|   | b.  | ethical standards rating. |
|   | c.  | Gallup Poll. |
|   | d.  | 4045 American adults. |

|  |  |
| --- | --- |
| *ANSWER:* | b |

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|  |
| --- |
| Due to the rising costs of accidents, many employers have started requiring employees to take courses designed to heighten safety awareness. One company is trying to decide which one of two courses to implement. To help make a decision, ten employees selected at random take Course A, and another ten randomly selected employees take Course B. Each employee then takes the same safety test that is graded out of a possible 50 points. Based on the safety test scores, the company concluded that neither course was significantly better at heightening safety awareness.​ |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 35. This study is a(n)

|  |  |  |
| --- | --- | --- |
|   | a.  | observational study. |
|   | b.  | experiment. |
|   | c.  | sample survey. |
|   | d.  | population. |

|  |  |
| --- | --- |
| *ANSWER:* | b |

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 36. The *population* for this study is

|  |  |  |
| --- | --- | --- |
|   | a.  | all employers. |
|   | b.  | all employees. |
|   | c.  | safety test score. |
|   | d.  | 20 employees. |

|  |  |
| --- | --- |
| *ANSWER:* | b |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 37. The *sample* for this study is

|  |  |  |
| --- | --- | --- |
|   | a.  | all employers. |
|   | b.  | all employees. |
|   | c.  | safety test score. |
|   | d.  | 20 employees. |

|  |  |
| --- | --- |
| *ANSWER:* | d |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 38. The *response variable* for this study is

|  |  |  |
| --- | --- | --- |
|   | a.  | 20 employees. |
|   | b.  | safety test score. |
|   | c.  | Course A and Course B. |
|   | d.  | safety awareness. |

|  |  |
| --- | --- |
| *ANSWER:* | b |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 39. In this study, safety test score is a

|  |  |  |
| --- | --- | --- |
|   | a.  | categorical variable. |
|   | b.  | numerical variable. |
|   | c.  | quantitative variable. |
|   | d.  | both B and C are correct. |

|  |  |
| --- | --- |
| *ANSWER:* | d |

 |