

Test 6 (Unit 10) version 3**Question 1 .**

Order the following list of numbers from least to greatest.

$$\frac{49}{5}, 9.\bar{8}, \frac{29}{3}, \sqrt{94}$$

- ☐ A. $\frac{29}{3}, \frac{49}{5}, 9.\bar{8}, \sqrt{94}$
- ☐ B. $9.\bar{8}, \frac{29}{3}, \sqrt{94}, \frac{49}{5}$
- ☐ C. $\sqrt{94}, \frac{49}{5}, \frac{29}{3}, 9.\bar{8}$
- ☐ D. $\frac{29}{3}, \sqrt{94}, \frac{49}{5}, 9.\bar{8}$

Question 2 .

Harvey is solving an equation. His work is shown below.

$$5x + (5x + 9) = 57$$

$$(5x + 5x) + 9 = 57$$

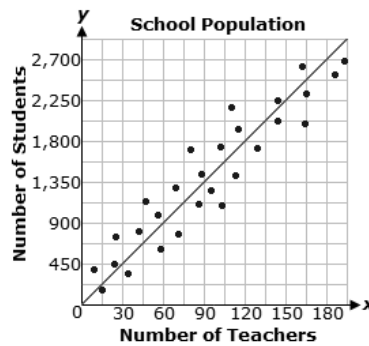
$$10x + 9 = 57$$

Which statement describes the procedure Harvey used in his work and which property justifies the procedure?

- ☐ A. Harvey regrouped the terms to multiply $5x$ and $5x$ by 9. This procedure is justified by the associative property.
- ☐ B. Harvey regrouped the terms to add $5x$ and $5x$ and 9. This procedure is justified by the commutative property.
- ☐ C. Harvey regrouped the terms to multiply $5x$ and $5x$. This procedure is justified by the commutative property.
- ☐ D. Harvey regrouped the terms to add $5x$ and $5x$. This procedure is justified by the associative property.

Question 3 .

The graph below shows a line of best fit for data collected on the number of students versus the number of teachers in area schools.



Based on the line of best fit, how many teachers are at a school that has 1,575 students?

- ☐ A. 315
- ☐ B. 105
- ☐ C. 210
- ☐ D. 15

Question 4 .

The number of cars sold last year by different salespeople at a dealership are shown in the stem-and-leaf plot below.

| Cars Sold | |
|-----------|-----------------|
| 5 | 8 |
| 6 | 2 5 5 8 |
| 7 | 0 1 3 3 6 6 6 7 |
| 8 | 0 1 1 |

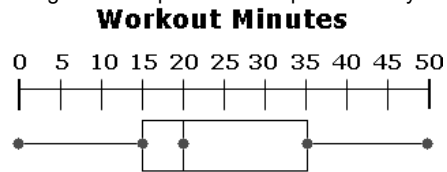
| Key | |
|-----|-------------|
| 6 | 5 = 65 cars |

What was the mean number of cars sold by a sales person last year?

- ☐ A. 71
- ☐ B. 72
- ☐ C. 73
- ☐ D. 76

Question 5 .

At six o'clock on Monday night, each customer at Fitorama is asked how many minutes they've worked out so far that evening. Their responses are represented by the following data.



What percentage of customers had worked out 20 minutes so far?

- ☐ A. 50%
- ☐ B. 35%
- ☐ C. 25%
- ☐ D. 75%

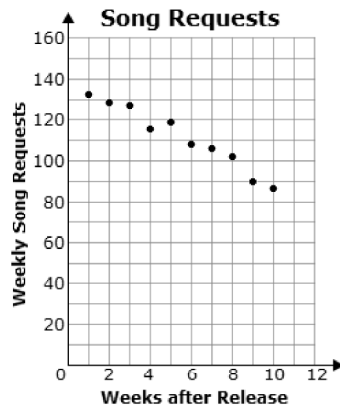
Question 6 .

In a bag of keys, there are 14 silver keys, 5 black keys, 11 copper keys, and 4 painted keys of various colors. One key is drawn out at random. What is the probability that the key that is drawn is silver or copper?

- ☐ A. $\frac{11}{34}$
- ☐ B. $\frac{7}{17}$
- ☐ C. $\frac{19}{34}$
- ☐ D. $\frac{25}{34}$

Question 7 .

A radio station director recorded the number of times a certain song was requested each week after it was released. The results are shown in the scatter plot.



Based on the line of best fit, **about** how many times will the song be requested 14 weeks after it has been released?

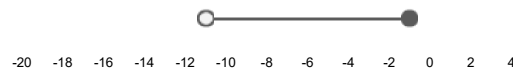
- ☐ A. 42
- ☐ B. 56
- ☐ C. 68
- ☐ D. 88

Question 8 .

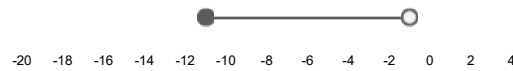
Which of the following number lines shows the solution to the inequality given below?

$$2x + 9 \leq -13 \text{ OR } 3x + 9 > 6$$

☐ A.



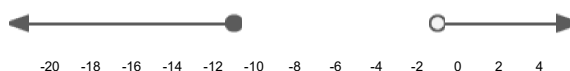
☐ B.



☐ C.



☐ D.



Question 9 .

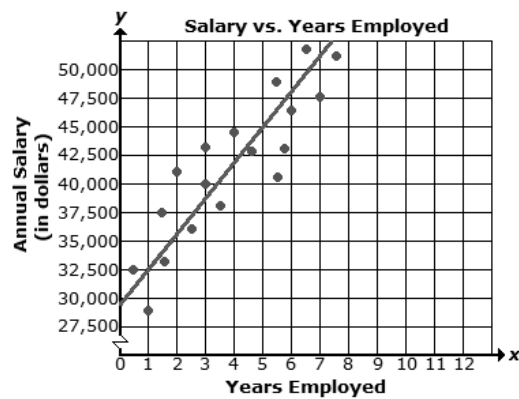
The following are the average temperatures ,in °F, recorded in Dallas over a period of ten days in the month of January.

47 48 46 42 50 52 56 54 50 51

Which statement about the data is correct?

- ☐ A. The third quartile of the data is 53.
- ☐ B. The first quartile of the data is 46.
- ☐ C. The interquartile range of the data is 8.
- ☐ D. The range of the data is 14.

Question 10 .



The graph above shows a line of best fit for data collected on the salary of employees based on their time with a company. What is the equation of the line of best fit?

- ☐ A. $y = 3,125x + 30,000$
- ☐ B. $y = \frac{5}{4}x + 30,000$
- ☐ C. $y = \frac{5}{4}x + 29,375$
- ☐ D. $y = 3,125x + 29,375$

Question 11 .

Terry is going to purchase one item each from two quarter machines. The first quarter machine contains bracelets that are 5 different colors, including her favorite color, blue. There are equal amounts of each color. The second quarter machine contains 1 sticky hand, 1 pencil topper, 2 erasers, 3 plastic rings, and 4 bouncing balls.

What is the probability that Terry will get a blue bracelet and a bouncing ball by putting a quarter in each machine?

- ☐ A. $\frac{3}{55}$
- ☐ B. $\frac{4}{55}$
- ☐ C. $\frac{1}{55}$
- ☐ D. $\frac{2}{55}$

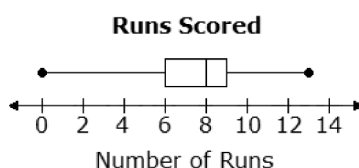
Question 12 .

When factored completely, which is a factor of $3x^3 - 9x^2 - 12x$?

- ☐ A. $(x - 3)$
- ☐ B. $(x - 4)$
- ☐ C. $(3x - 1)$
- ☐ D. $(3x - 4)$

Question 13 .

The box-and-whisker plot below represents the number of runs scored in each game of a baseball team's season.

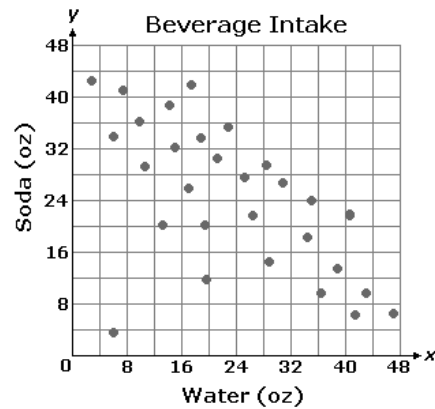


Based on the box-and-whisker plot, which statement about the number of runs is **most likely** true?

- ☐ A. The team scored at least 1 run in every game.
- ☐ B. The team scored between 6 and 13 runs in three-fourths of their games.
- ☐ C. The team scored between 0 and 8 runs in one-fourth of their games.
- ☐ D. The team scored 8 runs in one-half of their games.

Question 14 .

A group of people was surveyed about the amount of soda and water they drink each day. The graph below shows the results of the survey.



Based on the graph, which of the following is a valid conclusion?

- ☐ A. As the number of ounces of water a person drinks decreases, the number of ounces of soda he or she drinks decreases.
- ☐ B. As the number of ounces of water a person drinks decreases, the number of ounces of soda he or she drinks stays the same.
- ☐ C. As the number of ounces of water a person drinks increases, the number of ounces of soda he or she drinks increases.
- ☐ D. As the number of ounces of water a person drinks increases, the number of ounces of soda he or she drinks decreases.

Question 15 .

$$6x^2yz^2 \quad 22x^3y$$

What is the greatest common factor (GCF) of the monomials shown above?

- ☐ A. $2x^3yz^2$
- ☐ B. $66x^3yz^2$
- ☐ C. $2x^2y$
- ☐ D. $66x^5y^2z^2$

Question 16 .

Evaluate the following expression for $z = 101$.

$$10 + 7\sqrt{z - 1}$$

- ☐ A. 87
- ☐ B. 73
- ☐ C. 170
- ☐ D. 80

Question 17 .

What is the interquartile range of the set of data given below?

66, 55, 81, 86, 85, 69, 71, 77, 61, 51, 63, 66, 85

- ☐ A. 18
- ☐ B. 20
- ☐ C. 35
- ☐ D. 21

Question 18 .

What is the lower quartile, Q_1 , of the following data set?

51, 46, 39, 59, 63, 68, 38, 65, 43, 64, 56, 34, 45, 57, 37

- ☐ A. 66
- ☐ B. 59
- ☐ C. 39
- ☐ D. 65

Question 19 .

Cordelia used a random number generator to choose a name for her new puppy. Her results are in the table below.

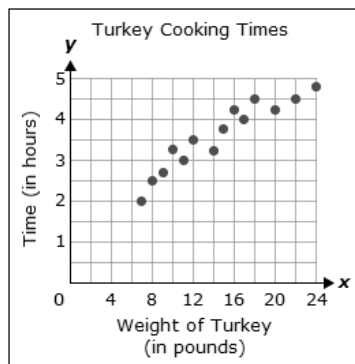
| Name | Number Assigned | Frequency |
|---------|-----------------|-----------|
| Sparky | 1 - 5 | 1 |
| Solomon | 6 - 10 | 15 |
| Lemon | 11 - 15 | 2 |
| Linus | 16 - 20 | 9 |
| Lassie | 21 - 25 | 23 |

Based on her results, what is the experimental probability that the puppy will be named Lemon or Linus?

- ☐ A. $\frac{12}{25}$
- ☐ B. $\frac{9}{50}$
- ☐ C. $\frac{1}{25}$
- ☐ D. $\frac{11}{50}$

Question 20 .

The scatter plot shows the number of hours (y) it takes to cook a turkey based on the weight of the turkey (x).



Which equation **best** describes the line of best fit?

- ☐ A. $y = 0.16x + 1.28$
- ☐ B. $y = 0.16x + 2$
- ☐ C. $y = 0.2x$
- ☐ D. $y = 0.2x + 0.5$

Question 21 .

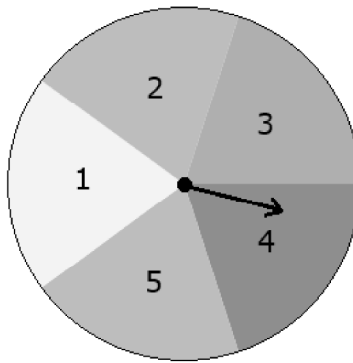
Simplify the following expression.

$$(3x + 6)^2$$

- ☐ A. $9x^2 - 36$
- ☐ B. $9x^2 + 18x + 36$
- ☐ C. $9x^2 - 36x + 36$
- ☐ D. $9x^2 + 36x + 36$

Question 22 .

A spinner with five equal-sized sections numbered 1 through 5 is shown.

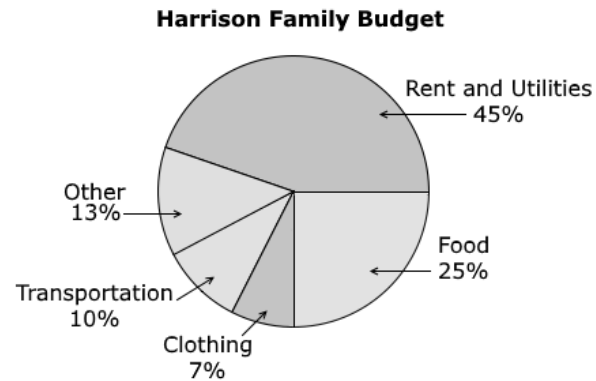


The spinner is spun twice and the product of the numbers in the sections where the arrow lands is calculated. What is the probability that the product of the numbers is even?

- ☐ A. $\frac{1}{16}$
- ☐ B. $\frac{4}{25}$
- ☐ C. $\frac{1}{2}$
- ☐ D. $\frac{16}{25}$

Question 23 .

The Harrison family records their yearly budget in a circle graph.



If the Harrison family's yearly income is \$87,000, how much money will they **most likely** spend on food?

- ☐ A. \$3,480
- ☐ B. \$6,090
- ☐ C. \$21,750
- ☐ D. \$39,150

Answers

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