

Unit 8: Data Sets, Distributions, and Sampling

ADVANCED • SET 2

Name: _____ Date: _____

Show all your work on separate paper. Give each answer as an exact number or fraction in lowest terms.

1. A set of 6 quiz scores is 12, 15, 18, x , 20, and 25. If the mean of all six scores is exactly 19, what is the value of x ?

Answer: _____

3. For the data set 4, 8, 10, 14, 19, compute the mean absolute deviation (MAD). Give your answer as a decimal.

Answer: _____

5. A bag holds 8 red, 6 blue, 10 green, and 6 yellow marbles. One marble is drawn at random. What is the probability that it is NOT blue? Give your answer as a fraction in lowest terms.

Answer: _____

7. A biologist tags 15 fish and releases them into a lake. Later she catches 60 fish, of which 12 are tagged. Using the capture-recapture proportion, estimate the total number of fish in the lake.

Answer: _____

9. In a survey of 250 students, exactly 36% chose pizza as their favorite lunch. How many students chose pizza?

Answer: _____

2. Find the median of this data set: 47, 23, 88, 15, 62, 39, 71, 54, 29, 96, 42, 58.

Answer: _____

4. Find the interquartile range (IQR) of this ordered data set: 3, 7, 7, 9, 12, 14, 18, 21, 25, 30. (Use the median-of-halves method, with the two middle values split evenly into a lower and upper half of 5 values each.)

Answer: _____

6. A fair number cube (faces 1-6) is rolled once, and a spinner with 5 equal sections labeled A, B, C, D, E is spun once. What is the probability of rolling a 3 AND landing on A or B? Give your answer as a fraction in lowest terms.

Answer: _____

8. The mean of 9 numbers is 14. One more number is added to the set, and the mean of all 10 numbers becomes 15. What is the value of the number that was added?

Answer: _____

10. One class of 18 students has a test average of 82. Another class of 12 students has an average of 74. What is the combined mean of all 30 students? Give your answer as a decimal.

Answer: _____

11. A data set is 22, 24, 25, 23, 26, 90. The value 90 is identified as an outlier and removed. What is the mean of the remaining five values?

Answer: _____

12. The probability that a certain event occurs on any one trial is $\frac{3}{8}$. Out of 160 independent trials, how many times is the event expected to occur?

Answer: _____