ALGEBRA 1

Exam 13

Based on Chapter 13 (pages 840-901) in your textbook.

Student's Name _____ **Student Number** _____

Street _____ **City** _____ **State** _____ **Zip Code** _____

BE SURE YOU FULLY UNDERSTAND ALL CHECKPOINT PROBLEMS FROM THIS CHAPTER **BEFORE** YOU COMPLETE THIS EXAM. **SHOW** AS MUCH **WORK** AS POSSIBLE.

Fill in the blanks below with the most appropriate vocabulary term from this chapter.

Given the data set $D = \{2, 2, 3, 3, 4, 4, 4, 5, 5, 6, 6\}$

1. Since $\frac{2+2+3+3+4+4+4+5+5+6+6}{11} = \frac{44}{11} = 4$, the _____ of D is 4.

2. Since 4 is the "middle" value, the _____ of D is 4.

3. Since 4 occurs the most often, the _____ of D is 4.

4. Since 3 is the "middle" value of $\{2, 2, 3, 3, 4,\}$, the _____ of D is 3.

5. Since 5 is the "middle value of $\{4, 5, 5, 6, 6\}$, the _____ of D is 5.

6. Since $6 - 2 = 4$, the _____ of D is 4.

7. Since $5 - 3 = 2$, the _____ of D is 2.

Jason has a cube with colored sides: red, orange, yellow, green, blue, and purple.

Give the odds for each of the following events.

8. Find the odds in favor of rolling a primary color.

9. Find the odds against rolling blue or purple.

Give the theoretical probability of each of the following events.

10. Rolling a primary color.

11. Not rolling a purple.

Circle ALL (if any) applicable terms for the events described.

12. Rolling red or a primary color.

    overlapping event compound event mutually exclusive event permutation

13. Rolling orange or a primary color.

    overlapping event compound event mutually exclusive event permutation

14. Rolling the cube twice, Jason rolls yellow and then green.

    overlapping event dependent independent permutation

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Calculate the theoretical probability of the following events.

15. Problem 12

16. Problem 13

17. Problem 14

For each event, circle the most appropriate term.

18. ${}_{900}P_{30}$

counting principle combination factorial permutation

19. $6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1$

counting principle combination factorial permutation

20. $\dfrac{50!}{(50-5)!\,5!}$

counting principle combination factorial permutation

21. Six friends go to a movie. How many ways can they sit in a row of six seats?

counting principle combination factorial permutation

22. In a sweepstakes with seven hundred entries, the first winner selected receives the grand prize, the second receives first prize, and so on until all thirty-five prizes are awarded. How many possible outcomes are there?

counting principle combination factorial permutation

23. Of the fifty states, five are randomly selected to have their governor participate in a summit. How many different groups of governors can go?

counting principle combination factorial permutation

(more)

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Fill in the blank with the appropriate problem number (18, 19, or 20) and then give the solution (you may use scientific notation, rounded to the nearest tenth, if necessary).

24. Problem 21 can be solved with the setup given in problem _____, and the solution to problem 21 is:

25. Problem 22 can be solved with the setup given in problem _____, and the solution to problem 22 is:

26. Problem 23 can be solved with the setup given in problem _____, and the solution to problem 23 is:

Circle the most appropriate description.

27. A city planning committee surveys 100 people waiting at a bus stop about the expansion of the public transportation system.

random sample	systematic sample	self-selected sample
convenience sample	bipartisan sample	stratified random sample

28. Volunteers stop to survey residents at every fourth house from the end of each block in town.

random sample	systematic sample	self-selected sample
convenience sample	bipartisan sample	stratified random sample

29. Do you agree that the cafeteria should serve ice cream in various tasty flavors?

potentially biased question not potentially biased question

Use the following stem-and-leaf plot, representing the starting salary (in thousands of dollars) of ten friends after college graduation, to complete problems 30 through 38.

1	7 8
2	0 1 4 4
3	0 2 4
4	0

Key: 1 | 7 = 17

30. List the values from the stem and leaf plot in numerical order.

31. What is the mode of this distribution?

32. What is the mean of this distribution?

33. Explain how you would find the median. What is the median for this set?

34. Explain how you would find the lower quartile. What is the lower quartile for this set?

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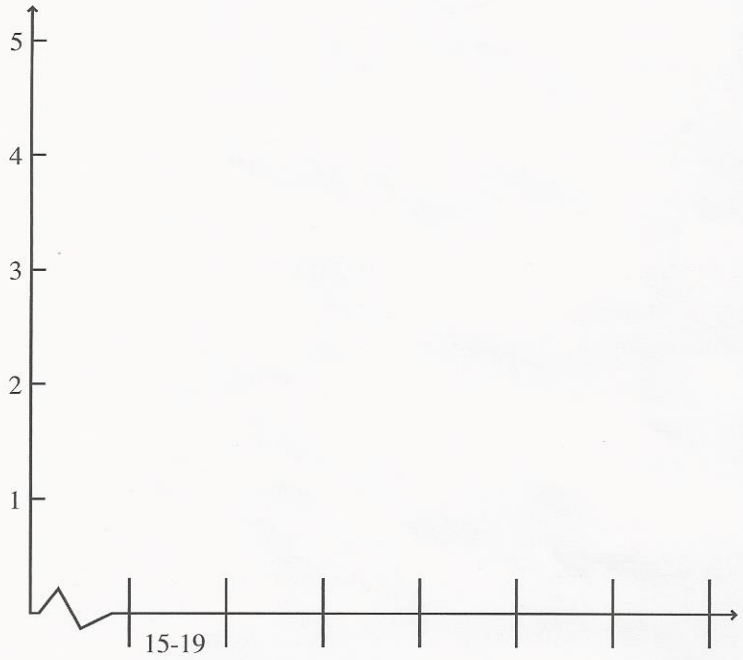
35. Explain how you would find the upper quartile. What is the upper quartile for this set?

36. Draw a box-and-whisker plot for this distribution; a number line is given for your scale.

37. Draw a histogram of the data using the grid provided, with intervals of five.



FILL IN YOUR NAME AND THE OTHER REQUIRED INFORMATION ON EACH PAGE OF THE EXAM AND MAIL THE EXAM TO THE SCHOOL.

Use this page if you need more room to show your work.