

15. Standard automobile license plates in California display a nonzero digit, followed by three letters, followed by three digits. **How many** different standard plates are possible in this system?
16. **How many** different ways can six red balls, five white balls, and seven blue balls be arranged in a row?
17. **How many** ways can the letters in the word *banana* be arranged?

CHECK ANSWERS #15-27:

.066%	31.744%	32.92%
35.96%	79.01%	86.83%
$\frac{7}{11}$	60	270
	990	1365
110,544	2,598,960	
14,702,688	158,184,000	

#18-24 Combinations/Permutations: use C(n, r) or P(n, r) and solve with a calculator. Show your set up.

18. **How many** ways can a president, vice president, and secretary be chosen from a class of 49 students?
19. A pizza parlor offers a choice of 15 different toppings. **How many** four-topping pizzas are possible?
20. **How many** five-card hands can be dealt from a deck of 52 cards?
21. **How many** ways can first, second, and third prizes be awarded in a game with eleven contestants?
22. A bag contains 4 yellow and 10 red markers that are drawn without replacement. **How many** ways can four markers be selected if exactly two must be yellow?
23. A bag contains 4 yellow and 10 red markers. Five markers are drawn without replacement. What is the **probability** of drawing 2 yellow markers and 3 red markers? Express answer as a percent.
24. What is the **probability** of getting a 5-card hand that contains 3 hearts and 2 aces? Express answer as a %.

25. **Conditional probability:** Two number cubes are tossed. What is the probability that the sum of the numbers shown on the cubes is less than 6 **given** that at least one cube shows a 1. Express answer as a fraction.

$$P(\quad | \quad) =$$

#26-27 Use binompdf or binomcdf to solve. Write the calculator command that you use, then express answer as a percent.

26. The probability of Brooke making a free throw is $\frac{2}{3}$. Find each probability if she shoots five times.
- a. P(exactly 4 made) b. P(at most 4 made) c. P(at least 3 made)
27. A weather reporter is forecasting a 40% chance of rain for the next **five** days. Find the **probability** of having rain for 3 or more days.

28. What is the **probability** of drawing one card from a standard deck and getting a Jack **or** a Spade?
29. What is the **probability** getting a sum of 9 on the first throw of two dice **and** a sum of 3 on the second toss?
30. What is the **probability** getting a sum of 9 **or** a sum of 3 if you roll two dice?

31. The mean of a set of normally distributed test scores is 72 and the standard deviation is 6. Sketch a graph.



Refer to your GRAPH, then state the answers to a - c:

- a. What percent of the data is between **54 and 90**?
- b. What percent of the data is between **72 and 84**?
- c. What percent of the data is between **66 and 78**?

Use a calculator to solve parts d - f, write the notation that you use. Round your percent to the nearest tenth.

- d. What percent of the data is in the interval **60-80**?
- e. What percent of the data is **above 81**?
- f. What percent of the data is **below 75**?

CHECK ANSWERS #28-31: $\frac{4}{13}$ $\frac{1}{6}$ $\frac{1}{162}$ 6.7% 68% 69.1% 47.5% 88.6% 99.7%

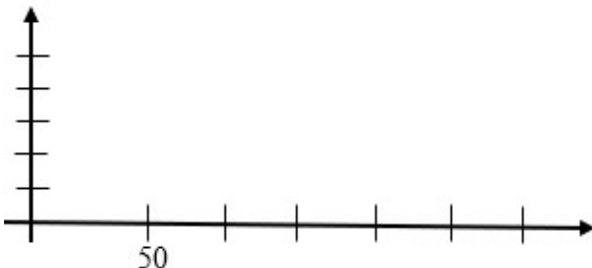
32. Use your calculator, enter the values into a list, sort, and then use 1-Var Stats.

82 77 84 98 98 71 76 64 89 95 78 89 65 88 54
 96 87 92 80 85 93 89 50 62 79 90 86 75 99 62

- a. List the five-number summary.
- b. Draw a box-and-whisker plot of the test scores.



- c. What is the arithmetic mean of the test scores?
- d. What is the standard deviation of the test scores?
- e. What is the mode of the test scores?
- f. Construct a *frequency table* of the data.
- g. Make a stem-and-leaf plot of the data.
- h. Draw a histogram of the data with intervals of 10, starting at 50.

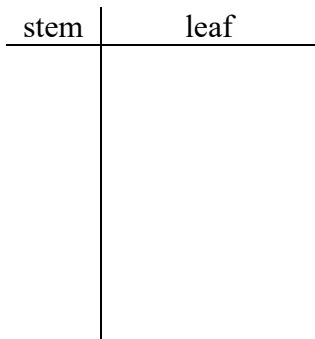


NOTE:
 50-60 same as
 $50 \leq \text{score} < 60$

test scores	frequency

#32 CHECK ANSWERS

2
4
6
8
10
13.1
50
75
81.1
84.5
89
90
99
50-60
60-70
70-80
80-90
90-100



7 | 1 means 71