

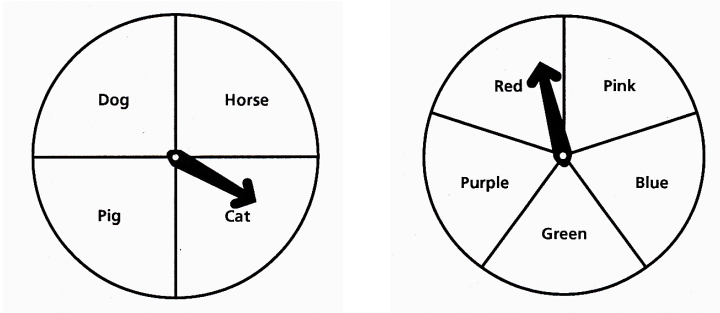
Garden Grove Unified School District
Probability and Statistics Quarter 2 Benchmark Review 2009-10

** For variance and standard deviation problems, use $n - 1$

Scientific calculators are permitted

1. **PS 1.0** Six letters, A through F, are written on cards and placed in a box. Two letters are randomly selected. What is the probability that A and B are selected in any order?

2. **PS 1.0** Mary is playing a game using the spinners shown below:



She spins each spinner once and gets 1 point if she lands either on “cat” or “red”. Show how she would calculate the probability that she will get exactly 1 point?

3. **PS 1.0** A candy company determines that there is a 5% chance that a box of candy is underfilled. If two boxes are taken off the shelf of a store, what is the probability that both boxes will be filled properly?

4. **P 2.0** The computer club has 100 members. There are 50 women and 50 men. Thirty of the women are 21 years of age and older, 45 of the men are 21 years of age and older. What is the probability that a member who is 21 or older and selected at random will be a woman?

5. **PS 2.0** There are 200 students sitting in the bleachers of the gym watching a basketball game; 120 girls and 80 guys. Two students are randomly selected to shot free-throws for a prize. What is the probability that both students will be guys?

6. **PS 2.0** Jack has a well-shuffled standard deck of cards. He randomly draws one card, and does not replace it, then randomly draws another card. Show how to find the probability that Jack will draw two cards that are both “Aces.”

7. **P 3.0** The math department gives 15% each of A’s and F’s, 18% each of B’s and D’s and 34% of C’s. What is the probability that a student selected at random will receive a “B” or better grade?

8. **PS 3.0** Alex, Brianne, Chuck, Denise, Erin, and Fred are officers in the dance club. Only 3 of them can go to a conference. The students will be selected randomly, drawing names out of a hat. What is the probability that Erin is chosen?

9. **PS 3.0** The probability of being left-handed is about 10%. What is the probability that exactly 2 out of 3 students are right-handed?

10. **PS 5.0** In the last 12 days of December, LA had 3 days with a high temperature of 75° , 2 days of 72° , 2 days of 60° , and one day each of 74° , 71° , 58° , 57° , and 55° . What was the mean temperature for that period?

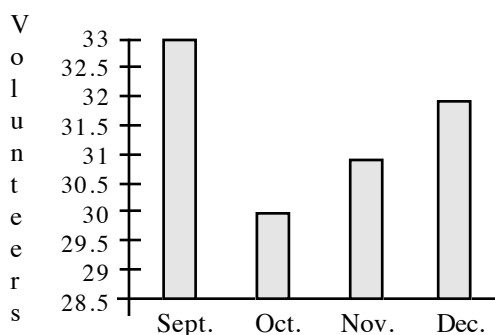
11. **PS 5.0** The mean salary for the engineering department of a large company is \$100,000. The salaries for the engineering department follow a normal distribution. About 95% of the salaries are between \$60,000 and \$140,000. What is the standard deviation of the salaries for the engineering department?

12. **PS 5.0** Amy recorded the wait time, in minutes, it took customers to get their car washed at Jiffy Wash Car Wash.

25	26	24	28	29	25	30
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What is the standard deviation, in minutes, of the data?

13. **PS 6.0** The number of volunteers for the fund-raiser over 4 months is shown in the graph below.



What is the mean number of volunteers per month?

14. **PS 6.0** What value needs to be added to the stem-and-leaf plot to have a mean of 40?

2	5	7		
3	1	3	4	
4	0	1	2	5
5	3	4		

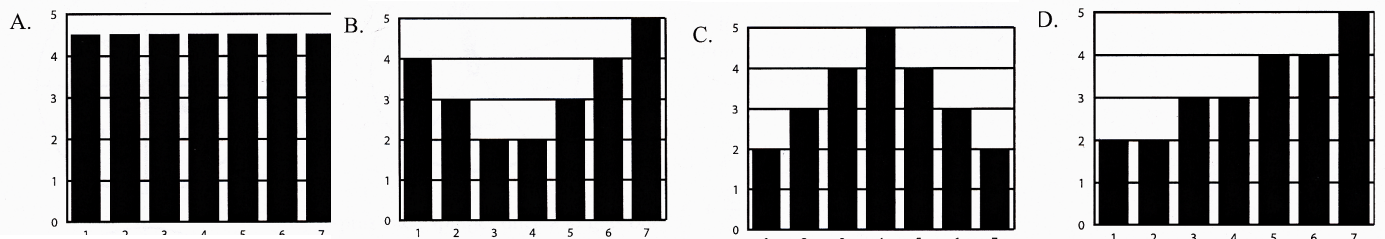
15. **PS 6.0** A set of data includes the following numbers:

1, 2, 5, 4, 5, 1, 7, 4, 5, 6

Which statement is true?

- A. The mode is less than the median
- B. The mean is more than the mode
- C. The median and mean are equal
- D. The median lies between the mean and the mode

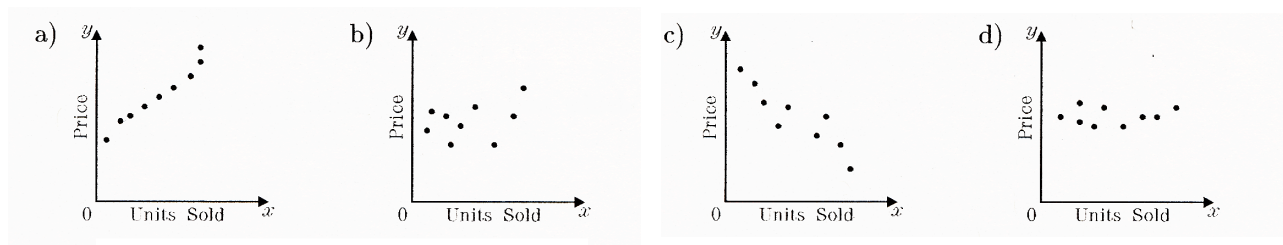
16. **PS 7.0** The following displays have the same mean,. Which display has the smallest standard deviation? Explain.



17. **PS 7.0** Barry Bond's homerun totals from 2000 to 2005 were 49, 73, 46, 45, 45, 5. What is the standard deviation to the nearest 0.1 of this data?

18. **PS 7.0** What is the variance of the data set 2, 3, 4, 5, 11?

19. **PS 8.0** Rebecca sells designer t-shirts. During the first 2 months of her business, she adjusted the price of the shirts each week to find the price that would maximize her profit. As expected, she found that the higher the price, the fewer t-shirts she sold. Which scatterplot reflects her data?



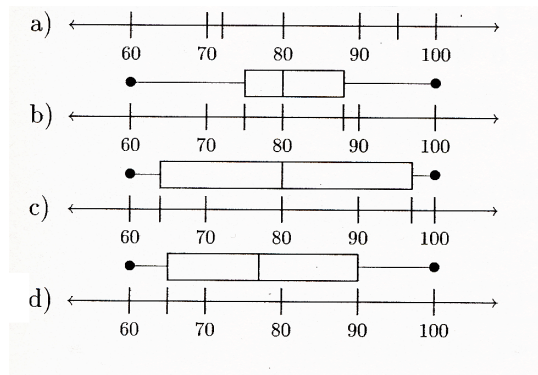
20. **PS 8.0** The following table shows the growth of a tree over a 6 month period. Which of the following graphs would best display the tree's growth over that period? Explain.

7 mo	12 in
8 mo	14 in
9 mo	16 in
10 mo	18 in
11 mo	21 in
12 mo	25 in

- A. bar graph
- B. line graph
- C. histogram
- D. scatter plot

21. **PS 8.0** Which of the following box-and-whisker plots represents the data shown in the given stem-and-leaf plot?

6	0	1	2	4	5	7
7	8					
8	2	5				
9	0	5	8			
10	0					



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Answer Key

1. $\frac{1}{15}$
2. $\frac{1}{4} \bullet \frac{4}{5} + \frac{1}{5} \bullet \frac{3}{4}$
3. 0.9025
4. $\frac{2}{5}$
5. $\frac{158}{995}$
6. $\frac{4}{52} \bullet \frac{3}{51}$
7. 33%
8. $\frac{1}{2}$
9. 0.243
10. 67°
11. \$20,000
12. 2.3 min
13. 31.5
14. 55
15. D
16. C
17. 21.9
18. 12.5
19. C
20. B
21. D