

**Quiz 5 for Statistics 301**  
**Elementary Statistical Methods - Spring 1999**  
**Material Covered: Chapter 10 of Workbook; Chapter 7 of text**  
**For: 2nd April**

Name (please print): \_\_\_\_\_  
last first

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1. Try the following questions.

(a) [2] Yearly dental care costs between \$250 and \$725. Suppose the mean cost of dental care is \$425 and the standard deviation is \$175. If a random sample of 100 dental care costs is selected, find the probability the mean cost per yearly dental care for the sample falls between \$400 and \$450. Circle the closest probability.

(a) **0.75**    (b) **0.80**    (c) **0.85**    (d) **0.90**    (e) **0.95**

(b) [1] **True / False** No matter what the distribution is, as long as a large enough sample is taken, the average of this sample follows a normal distribution.

(c) [1] Simulate the random drawing of five samples of four marbles from a bowl using seed **3** by using, in particular, **randInt(5,15,20)**. Assume the first three numbers generated by the calculator represent the first sample, the second group of the three numbers represent the second sample and so on. List the five samples.

(d) [1] Consider the following table.

marble	5,6,7	8,9	10,11,12,13,14,15
represents $x =$	1	2	3

The chance that  $x$  equals 2 is (circle one) **0.2 / 0.3 / 0.4 / 0.5 / 0.6**

(e) [1] Use the table in question (d) above to determine the five averages associated with the five samples collected in question (c) above.

- (a) [2] Yearly dental care costs between \$250 and \$725. Suppose the mean cost of dental care is \$425 and the standard deviation is \$175. If a random sample of 100 dental care costs is selected, find the probability the mean cost per yearly dental care for the sample falls between \$400 and \$450. Circle the closest probability.  
(c) **0.85**
- (b) [1] **False** No matter what the distribution is, as long as a large enough **random** sample is taken, the average of this sample follows a normal distribution.
- (c) [1] Simulate the random drawing of five samples of four marbles from a bowl using seed **3** by using, in particular, **randInt(5,15,20)**. Assume the first three numbers generated by the calculator represent the first sample, the second group of the three numbers represent the second sample and so on. List the five samples.  
**7, 11, 12, 9; 5, 7, 7, 14; 9, 13, 9, 14; 8, 5, 5, 10; 15, 6, 9, 8**
- (d) [1] Consider the following table.

marble	5,6,7	8,9	10,11,12,13,14,15
represents $x =$	1	2	3

The chance that  $x$  equals 2 is **0.2**

- (e) [1] Use the table in question (d) above to determine the five averages associated with the five samples collected in question (c) above.  
**7, 11, 12, 9; 5, 7, 7, 14; 9, 13, 9, 14; 8, 5, 5, 10; 15, 6, 9, 8**  
**1, 3, 3, 2; 1, 1, 1, 3; 2, 3, 2, 3; 2, 1, 1, 3; 3, 1, 2, 2**  
 **$\frac{9}{4}; \frac{6}{4}; \frac{10}{4}; \frac{7}{4}; \frac{8}{4}$**