Ch. 2.4-2.5 Quiz & Test Review

Name\_

1) \_\_\_\_\_

2)

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Solve the problem.

1) For the stem-and-leaf plot below, find the range of the data set.

2) Find the range of the data set represented by the graph.



3) The grade point averages for 10 students are listed below. Find the range of the data.	3)
2.0 3.2 1.8 2.9 0.9 4.0 3.3 2.9 3.6 0.8	
4) The heights (in inches) of 20 adult males are listed below. Find the range of the data.	4)
70 72 71 70 69 73 69 68 70 71 67 71 70 74 69 68 71 71 71 72	
5) The heights (in inches) of 10 adult males are listed below. Find the sample standard deviation.	5)

70 72 71 70 69 73 69 68 70 71

6) In a random sample, 10 students were asked to compute the distance they travel one way to school to the nearest tenth of a mile. The data is listed below.	6)
a) If a constant value k is added to each value, how will the standard deviation be affected?	
b) If each value is multiplied by a constant k, how will the standard deviation be affected?	
1.1 5.2 3.6 5.0 4.8 1.8 2.2 5.2 1.5 0.8	
7) The test scores of 30 students are listed below. Find $Q_3$ .	7)
31       41       45       48       52       55       56       63       65         67       67       69       70       74       75       78       79         80       81       83       85       87       90       92       95       99	
8) The weights (in pounds) of 30 preschool children are listed below. Find $Q_1$ .	8)
25252626.5272727.5282828.529293030.531313232.532.5333434.5353537373838	
9) The cholesterol levels (in milligrams per deciliter) of 30 adults are listed below. Find $P_{60}$ .	9)
154 156 165 165 170 171 172 180 184 185 189 189 190 192 195 198 198 200 200 205 205 211 215 220 220 225 238 255 265	
10) The cholesterol levels (in milligrams per deciliter) of 30 adults are listed below. Find the interquartile range for the cholesterol level of the 30 adults.	10)
154 156 165 165 170 171 172 180 184 185 189 189 190 192 195 198 198 200 200 205 205 211 215 220 220 225 238 255 265	
11) The test scores of 30 students are listed below. Find P <sub>30</sub> .	11)
31       41       45       48       52       55       56       63       65         67       67       69       70       70       74       75       78       79         80       81       83       85       87       90       92       95       99	
12) A teacher gives a 20-point quiz to 10 students. The scores are listed below. What percentile corresponds to the score of 12?	12)
20 8 10 7 15 16 12 19 14 9	
13) In a data set with a minimum value of 54.5 and a maximum value of 98.6 with 300 observations, there are 186 points less than 81.2. Find the percentile for 81.2.	13)

porcoptilo that corresponds to chalastoral loval of 105	
percentine that corresponds to cholesteror lever or 195.	
154 156 165 165 170 171 172 180 184 185	
205 205 211 215 220 220 225 238 255 265	
Find the range for the given sample data. 15) Rich Borne teaches Chemistry 101 Last week he gave his students a guiz Their scores are 15	
listed below.	·
30 31 47 29 32 11 48 41 50 59 37 22	
16) Jorge has his own business as a painter. The amounts he made in the last five months are 16	1
shown below.	
\$2416 \$2423 \$1644 \$2036 \$1267	
17) The prices (in dollars) of 12 electric smoothtop ranges are listed below.	
835 950 625 535 1435 1050	
18) The owner of a small manufacturing plant employs six people. As part of their personnel1818) The owner of a small manufacturing plant employs six people.18	
tile, she asked each employee to record the distance they travel one way from nome to work. The six distances (in miles) are listed below:	
2.4 5.2 1.8 4.9 6.4 3.5	
19) leremy called eight appliance stores and asked the price of a specific model of microwave 19	
oven. The prices quoted are listed below:	·
\$119 \$494 \$179 \$634 \$426 \$285 \$317 \$492	
20) Listed below are the amounts of weight change (in pounds) for ten women during their 20	)
first year of work after graduating from college. Positive values correspond to women who	
range?	
3 9 5 12 -1 24 0 -7 7 -1	
21) A class of sixth grade students kent accurate records on the amount of time they spent $21$	
playing video games during a one-week period. The times (in hours) are listed below:	·
15.2 16.9 9.6 12.7 23.4 30.1 26.9 21.0 19.4 16.4	
22) The manager of an electrical supply store measured the diameters of the rolls of wire in the 22 inventory. The diameters of the rolls (in meters) are listed below.	
0.177 0.115 0.542 0.413 0.618 0.315	
Find the standard deviation for the given data. Round your answer to one more decimal place than the o must determine whether to calculate a sample standard deviation or population standard deviation	riginal data. You
23) Jeanne is currently taking college zoology. The instructor often gives quizzes. On the past 23	
five quizzes, Jeanne got the following scores: 17 18 1 20 13	

24) The owner of a small manufacturing plant employs six people. As part of their personnel file, she asked each one to record to the nearest one-tenth of a mile the distance they travel one way from home to work. The six distances are listed below: 54 63 50 17 21 65	24)
<ul> <li>25) A class of sixth grade students kept accurate records on the amount of time they spent playing video games during a one-week period. The times (in hours) are listed below:</li> <li>20.6 20.0 28.9 22.9 27.5</li> <li>17.1 23.4 15.5 30.8 29.9</li> </ul>	25)
26) The weights (in ounces) of 10 cookies are shown. 1.47 0.56 0.58 0.86 1.21 1 1.46 1.44 0.88 0.53	26)
<ul> <li>27) The normal monthly precipitation (in inches) for August is listed for 12 different U.S. cities.</li> <li>3.5 1.6 2.4 3.7 4.1 3.9</li> <li>1.0 3.6 4.2 3.4 3.7 2.2</li> </ul>	27)

Find the standard deviation for the given sample data. Round your answer to one more decimal place than is present in the original data. You must determine whether to calculate a sample standard deviation or population standard deviation.

28) Population	19 6 19 15 14 5 18 15 13	28)
29) Sample	114 105 245 193 295 248 229 229 170	29)
30) Population	20.0 21.5 27.4 47.3 13.1 11.1	30)
31) The top nine sco 66, 43, 86,	pres on the organic chemistry midterm are as follows. 45, 68, 62, 29, 62, 90	31)
32) To get the best of a specific model \$296 \$111	deal on a CD player, Tom called eight appliance stores and asked the cost of I. The prices he was quoted are listed below: \$149 \$174 \$347 \$118 \$202 \$110	32)
33) The numbers lis different U.S. ci 18.0 21.6	sted below represent the amount of precipitation (in inches) last year in six ties. 39.2 39.5 12.5 19.6	33)
34) Listed below and year of work aft gained weight a 2 -5 14	e the amounts of weight change (in pounds) for 12 women during their first ter graduating from college. Positive values correspond to women who and negative values correspond to women who lost weight. 4 -7 13 -6 1 0 4 -3 9	34)
35) Listed below ard been working a 2 3 5 13	e the amounts of time (in months) that the employees of a restaurant have t the restaurant. 22 35 60 86 101 122	35)

<ul><li>36) The manager of an electrical supply store measured the diameters of the rolls of wire in the inventory. The diameters of the rolls (in meters) are listed below.</li><li>0.402 0.23 0.569 0.317 0.23 0.543 0.492</li></ul>	36)
Determine the sample standard deviation. Round results to the nearest tenth. 37) The heights in feet of people who work in an office are as follows. 5.8 6.1 5.9 5.4 5.6 5.8 5.9 6.2 6.1 5.8	37)
38) The race speeds for the top eight cars in a 200-mile race are listed below. 185.9 179.5 189.2 176.7 175.6 188.7 186.3 177.9	38)
39) The following is a set of data showing the water temperature in a heated tub at different time intervals. 114.9 115.8 116.8 113.3 113.8 115.9 112.5 114.8	39)
Find the percentile for the data value. 40) Data set: 55 38 30 66 67 68 44; data value: 55	40)
41) Data set: 4 13 8 6 4 4 13 6 4 13 2 13 15 5 9 4 12 8 6 13; data value: 6	41)
42) Data set: 122 134 126 120 128 130 120 118 125 122 126 136 118 122 124 119; data value: 128	42)
Find the indicated measure. 43) Use the given sample data to find Q3. 49 52 52 52 74 67 55 55	43)
44) The weights (in pounds) of 30 newborn babies are listed below. Find P <sub>16</sub> . 5.5 5.7 5.8 5.9 6.1 6.1 6.4 6.4 6.5 6.6 6.7 6.7 6.7 6.9 7.0 7.0 7.0 7.1 7.2 7.2	44)
45) The test scores of 32 students are listed below. Find P <sub>46</sub> . 32 37 41 44 46 48 53 55 56 57 59 63 65 66 68 69 70 71 74 74 75 77 78 79	45)
80 82 83 86 89 92 95 99 46) The test scores of 32 students are listed below. Find Q <sub>3</sub> . 32 37 41 44 46 48 53 55 56 57 59 63 65 66 68 69 70 71 74 74 75 77 78 79 80 82 83 86 89 92 95 99	46)

47) The test scores of 40 students are listed below. Find  $P_{85}$ .

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48) The test scores of 40 students are listed below. Find P<sub>56</sub>.

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Construct a box-and-whisker plot for the given data. Include values of the 5-number summary in all box-and-whisker plots.

49) The weights (in pounds) of 30 newborn babies are listed below. Construct a	49)
box-and-whisker plot for the data set. Calculate the measures of central tendency and all	
relevant measures oif spread. Perform an outlier test to algebraically determine whether	
any outliers exist.	
5.5 5.7 5.8 5.9 6.1 6.1 6.3 6.4 6.5 6.6	
6.7 6.7 6.7 6.9 7.0 7.0 7.0 7.1 7.2 7.2	
7.4 7.5 7.7 7.7 7.8 8.0 8.1 8.1 8.3 8.7	
50) The test scores of 40 students are listed below. Construct a box-and-whisker lot for the	50)
data set. Calculate the measures of central tendency and all relevant measures oif spread.	
Perform an outlier test to algebraically determine whether any outliers exist.	
25 35 43 44 47 48 54 55 56 57	

596263656668696971727273747677777879808181828385899293949798

Construct a boxplot for the given data. Include values of the 5-number summary in all boxplots.

51) The weekly salaries (in dollars) of 24 randomly selected employees of a company are shown below. Construct a box-and-whisker plot for the data set. Calculate the measures of central tendency and all relevant measures oif spread. Perform an outlier test to algebraically determine whether any outliers exist.
310 320 450 460 470 500 520 540 580 600 650 700 710 840 870 900 1000 1200 1250 1300 1400 1720 2500 3700

52) The highest temperatures ever recorded (in °F) in 32 different U.S. states are shown below. Construct a box-and-whisker plot for the data set. Calculate the measures of central tendency and all relevant measures oif spread. Perform an outlier test to algebraically determine whether any outliers exist.
100 100 105 105 106 106 107 107
109 110 112 112 112 114 114
114 115 116 117 118 118 118 118
118 119 120 121 122 125 128 134

47)

48)

51)

52)

<ul> <li>53) The normal monthly precipitation (in inches) for August is listed for 20 different U.S. citi Construct a box-and-whisker plot for the data set. Calculate the measures of central tendency and all relevant measures oif spread. Perform an outlier test to algebraically determine whether any outliers exist.</li> <li>0.4 1.0 1.5 1.6 2.0</li> <li>2.2 2.4 2.7 3.4 3.4</li> <li>3.5 3.6 3.6 3.7 3.7</li> <li>3.9 4.1 4.2 4.2 7.0</li> </ul>	es. 53)
<ul> <li>54) The weights (in ounces) of 27 tomatoes are shown below. Construct a box-and-whisker plot for the data set. Perform an outlier test to algebraically determine whether any outliexist. Calculate the measures of central tendency and all relevant measures oif spread. Perform an outlier test to algebraically determine whether any outliers exist.</li> <li>2.0 2.1 2.2 2.2 2.4 2.4 2.5 2.5 2.5</li> <li>2.6 2.6 2.7 2.7 2.7 2.7 2.8 2.8 2.8</li> <li>2.9 2.9 3.0 3.0 3.1 3.1 3.2 3.4</li> </ul>	54) ers
<ul> <li>55) The ages of the 35 members of a track and field team are listed below. Construct a box-and-whisker plot for the data set. Calculate the measures of central tendency and al relevant measures oif spread. Perform an outlier test to algebraically determine whether any outliers exist.</li> <li>15 16 18 18 18 19 20</li> <li>20 20 21 21 22 22 23</li> <li>23 24 24 24 25 25 26</li> <li>27 27 28 29 29 30 31</li> <li>31 33 34 35 39 42 48</li> </ul>	55)
<ul> <li>Solve the problem.</li> <li>56) The heights (in inches) of 10 adult males are listed below. Find the population standard deviation and the population variance. Show all calculations in table form.</li> <li>70 72 71 70 69 73 69 68 70 71</li> </ul>	56)
<ul> <li>57) In a random sample, 10 students were asked to compute the distance they travel one way to school to the nearest tenth of a mile. The data is listed below. Compute the range, sam standard deviation and sample variance of the data. Show all calculations in table form</li> <li>1.1 5.2 3.6 5.0 4.8 1.8 2.2 5.2 1.5 0.8</li> </ul>	/ 57) ple
58) You need to purchase a battery for your car. There are two types available. Type A has a mean life of five years and a standard deviation of one year. Type B has a mean life of fiv years and a standard deviation of one month. Both batteries cost the same. If you wish to purchase the battery whose life is more consistent., which one should you purchase?	58) e

Explain your reasoning.

59)⊢ (\$	lere Sou	e are irce:	e the Ma	e batt jor Le	ing av eague	erag Han	es of dboo	Marl k)	k Mc	Gwii	re and Mark McLemore for 13 recent years.	59)
N N	∕lar ∕lar	k N k N	lcG\ lcLe	wire more	.236 .189	240 289	.243 . .260 .	150 . 231 .	148 . 235 .	246 . 201 .	.284 .257 .261 .290 .261 .247 .257 .268 .333 .252 .274 .312 .274 .299	
V	Vhi	ch p	olay	er is r	nore d	onsi	stent	? Exp	olain	your	reasoning.	
60) Υ li σ	′ou ght r = 2	are bu 200	the Ibs f hou	main for the rs, or	tenan e class Type	ce er roor B wi	ngine ns. Sh ith µ :	er foi noulc = 300	r a loo 1 you 10 ho	cal h cho urs a	igh school. You must purchase fluorescent ose Type A with $\mu$ = 3000 hours and and $\sigma$ = 250 hours?	60)
61) T ra	'he ang	wei je of	ght: f the	s (in p 30 w	ound eights	s) of s liste	30 pr ed bel	esch Iow.	ool cl Wha	hildr t can	ren are listed below. Find the interquartile you conclude from the result?	61)
2 2 3	25 29 33	25 29 33	26 30 34	26.5 30 34.5	27 30.5 35	27 31 35	27.5 31 37	28 32 37	28 32.5 38	28 5 32 38	8.5 2.5	
62) T re o	he epr	test eser prea	sco nts t ad. I	res of he da Perfoi	30 stu ta. Ca m an	uden Icula outl	ts are ate the ier tes	e liste e me st to a	ed bel asure algeb	ow. es of eraica	Draw a box-and-whisker plot that central tendency and all relevant measures ally determine whether any outliers exist.	62)
3 6 8	81 57 80	41 67 81	45 69 83	48 70 85	52 5! 70 74 85 8 <sup>-</sup>	5 56 4 75 7 90	56 578 92	63 79 95	65 79 99			
63) T b a v	he ox- nd vhe	cho anc all r ther	leste d-w relev r an <u>y</u>	erol le hiske /ant r y out!	evels ( r plot neasu iers e	in m that res c kist.	illigra repre if spr	ams esent read.	per d s the Perfo	ecili data orm a	ter) of 30 adults are listed below. Draw a a. Calculate the measures of central tendency an outlier test to algebraically determine	63)
1 1 2	54 89 205	15 18 20	6 1 9 1 5 2	65 1 90 1 11 2	65 1 92 1 15 2	70 1 95 1 20 2	171 1 198 1 220 2	172 198 225	180 200 238	184 200 255	185 200 265	
l the me 64) A th d n	ean A co nos liffe	and omp e w eren sure	d me aris ho h ce b es of	edian on is have v etwe	for ea made vindo en the er. If t	ach c betv w ur two here	of the veen s nits. Ii data is, wi	two sumr nterp sets hat is	samj mer e pret th that i s it?	oles, lectr ne re s no	, then compare the two sets of results. ric bills of those who have central air and esults by determining whether there is a t apparent from a comparison of the	64)

	May	June	July	Aug	Sept
Central	\$32	\$64	\$80	\$90	\$65
Window	\$15	\$84	\$99	\$120	\$40

65) The Body Mass Index (BMI) is measured for a random sample of men from two different colleges. Interpret the results by determining whether there is a difference between the two data sets that is not apparent from a comparison of the measures of center. If there is, what is it?

Baxter College	24	23.5	22	27	25	21.5	25	24
Banter College	19	20	24	25	31	18	29	28

Provide an appropriate response.

66) Describe any similarities or differences in the two distributions represented by the following boxplots. Assume the two boxplots have the same scale.

66)

67)



- 67) Describe any similarities or differences in the two distributions represented by the following boxplots. Assume the two boxplots have the same scale.

65)