CATEGORY	*EXCELLENT*	*ADEQUATE*	*BELOW EXPECTATIONS*	*INADEQUATE*
DATA SETS	*5 points.* The data sets collected are appropriate and neatly written in labeled charts.	*4 points.* The data sets collected are appropriate and labeled with minimal organizational flaws.	*3 points.* The data sets collected are appropriate and written in unorganized charts.	*0 points.* Student does not record sample data. **AND/OR** The data sets are unorganized and illegible.
CALCULATIONS	*10 points.* Each point is addressed and all calculations are neatly organized and accurate.	*7 points.* Each point is addressed and all calculations are neatly organized with minimal mistakes.	*4 points.* Most of the points are addressed and/or calculations are unclear and contain several mistakes.	*0 points.* Student shows no understanding of the concepts covered in Chapter 6.
HISTOGRAM	*10 points.* The histogram is neatly constructed, for the data set, and includes accurate frequencies and labels.	*7 points.* The histogram is neatly constructed, for the data set, , and includes frequencies and labels with minimal flaws	*4 points.* Histogram is constructed but is unorganized and contains minimal flaws.	*0 points.* Student shows no understanding of how to construct a histogram.
NORMAL QUANTILE PLOT	*10 points.* The normal quantile plot is neatly constructed and include accurate calculations and labels. The lower and upper bounds of outlier are calculated correctly. Outlier(s) is(are) correctly identified	*7 points.* The normal quantile plot is neatly constructed and include calculations and labels with minimal flaws. The lower or upper bounds of outlier is calculated correctly. Outlier(s) is(are) partially identified	*4 points.* The normal quantile plot is constructed but are unorganized and contain minimal flaws. Neither lower nor upper bounds of outlier is calculated correctly. Outlier(s) is(are) not identified correctly	*0 points.* Student shows no understanding of how to construct a normal quantile plot.
ANALYSIS	*15 points.* Accurate conclusions are drawn and graphs are critically analyzed. **AND** Minimum length requirements are met.	*10 points.* Conclusions are drawn and graphs are critically analyzed with minimal flaws. **AND** Minimum length requirements are met.	*5 points.* Conclusions are partially incorrect and/or graphs are analyzed with some flaws. **AND** Minimum length requirements are met.	*0 points.* No relevant conclusions are drawn and the graphs are incorrectly analyzed. **AND/OR** Minimum length requirements are not met.

Chapter 6 Project

This is a group project of maximum of 3 students.

Analyze the data sets on P. 766 – 767 for "Male's Height" (HT) and "Female Height" (HT). You will follow the steps to analyze the normality of the data sets:

1. **Provide the histograms for both "Male's Height" and "Female Height" and comment on their shapes. Reject normality if the histogram departs dramatically from a bell shape.**

2. **Provide the detail steps in calculations for lower/upper limits of outlier(s), and then check to see if there is/are any data value lies beyond the benchmarks of the outlier(s). Reject normality if there is more than one outlier present.**

3. **Provide the graph of the normal quantile plot. If the histogram is basically symmetric and there is at most one outlier, use graphing calculator to generate a normal quantile plot. The population distribution is normal if the pattern of the points is reasonably close to a straight line and the points do not show some systematic pattern that is not a straight-line pattern.**

   The population distribution is NOT normal if either or both of these two conditions applies:
   a) **The points do not lie reasonably close to a straight line.**
   b) **The points show some systematic pattern that is not a straight-line pattern.**

4. **Write 4 ~ 6 sentences long analysis/summary.**

The entire project MUST be typed. No hand draw or writing will be accepted.

Data Set 1: Health Exam Results

AGE is in years, HT is height (inches), WT is weight (pounds), WAIST is circumference (cm), Pulse is pulse rate (beats per minute), SYS is systolic blood pressure (mm Hg), DIAS is diastolic blood pressure (mm Hg), CHOL is cholesterol (mg), BMI is body mass index, Leg is upper leg length (cm), Elbow is elbow breadth (cm), Wrist is wrist breadth (cm), and Arm is arm circumference (cm). Data are from the U.S. Department of Health and Human Services, National Center for Health Statistics, Third National Health and Nutrition Examination Survey.

STATDISK:	**Data set name for males is Mhealth.**
Minitab:	**Worksheet name for males is MHEALTH.MTW.**
Excel:	**Workbook name for males is MHEALTH.XLS.**
TI-83/84 Plus:	**App name for male data is MHEALTH and the file names are the same as for text files.**
Text file names for males:	**MAGE, MHT, MWT, MWAST, MPULS, MSYS, MDIAS, MCHOL, MBMI, MLEG, MELBW, MWRST, MARM.**

Male

Age	HT	WT	Waist	Pulse	SYS	DIAS	CHOL	BMI	Leg	Elbow	Wrist	Arm
58	70.8	169.1	90.6	68	125	78	522	23.8	42.5	7.7	6.4	31.9
22	66.2	144.2	78.1	64	107	54	127	23.2	40.2	7.6	6.2	31.0
32	71.7	179.3	96.5	88	126	81	740	24.6	44.4	7.3	5.8	32.7
31	68.7	175.8	87.7	72	110	68	49	26.2	42.8	7.5	5.9	33.4
28	67.6	152.6	87.1	64	110	66	230	23.5	40.0	7.1	6.0	30.1
46	69.2	166.8	92.4	72	107	83	316	24.5	47.3	7.1	5.8	30.5
41	66.5	135.0	78.8	60	113	71	590	21.5	43.4	6.5	5.2	27.6
56	67.2	201.5	103.3	88	126	72	466	31.4	40.1	7.5	5.6	38.0
20	68.3	175.2	89.1	76	137	85	121	26.4	42.1	7.5	5.5	32.0
54	65.6	139.0	82.5	60	110	71	578	22.7	36.0	6.9	5.5	29.3
17	63.0	156.3	86.7	96	109	65	78	27.8	44.2	7.1	5.3	31.7
73	68.3	186.6	103.3	72	153	87	265	28.1	36.7	8.1	6.7	30.7
52	73.1	191.1	91.8	56	112	77	250	25.2	48.4	8.0	5.2	34.7
25	67.6	151.3	75.6	64	119	81	265	23.3	41.0	7.0	5.7	30.6
29	68.0	209.4	105.5	60	113	82	273	31.9	39.8	6.9	6.0	34.2
17	71.0	237.1	108.7	64	125	76	272	33.1	45.2	8.3	6.6	41.1
41	61.3	176.7	104.0	84	131	80	972	33.2	40.2	6.7	5.7	33.1
52	76.2	220.6	103.0	76	121	75	75	26.7	46.2	7.9	6.0	32.2
32	66.3	166.1	91.3	84	132	81	138	26.6	39.0	7.5	5.7	31.2
20	69.7	137.4	75.2	88	112	44	139	19.9	44.8	6.9	5.6	25.9
20	65.4	164.2	87.7	72	121	65	638	27.1	40.9	7.0	5.6	33.7
29	70.0	162.4	77.0	56	116	64	613	23.4	43.1	7.5	5.2	30.3
18	62.9	151.8	85.0	68	95	58	762	27.0	38.0	7.4	5.8	32.8
26	68.5	144.1	79.6	64	110	70	303	21.6	41.0	6.8	5.7	31.0
33	68.3	204.6	103.8	60	110	66	690	30.9	46.0	7.4	6.1	36.2
55	69.4	193.8	103.0	68	125	82	31	28.3	41.4	7.2	6.0	33.6
53	69.2	172.9	97.1	60	124	79	189	25.5	42.7	6.6	5.9	31.9
28	68.0	161.9	86.9	60	131	69	957	24.6	40.5	7.3	5.7	32.9
28	71.9	174.8	88.0	56	109	64	339	23.8	44.2	7.8	6.0	30.9
37	66.1	169.8	91.5	84	112	79	416	27.4	41.8	7.0	6.1	34.0
40	72.4	213.3	102.9	72	127	72	120	28.7	47.2	7.5	5.9	34.8
33	73.0	198.0	93.1	84	132	74	702	26.2	48.2	7.8	6.0	33.6
26	68.0	173.3	98.9	88	116	81	1252	26.4	42.9	6.7	5.8	31.3
53	68.7	214.5	107.5	56	125	84	288	32.1	42.8	8.2	5.9	37.6
36	70.3	137.1	81.6	64	112	77	176	19.6	40.8	7.1	5.3	27.9
34	63.7	119.5	75.7	56	125	77	277	20.7	42.6	6.6	5.3	26.9
42	71.1	189.1	95.0	56	120	83	649	26.3	44.9	7.4	6.0	36.9
18	65.6	164.7	91.1	60	118	68	113	26.9	41.1	7.0	6.1	34.5
44	68.3	170.1	94.9	64	115	75	656	25.6	44.5	7.3	5.8	32.1
20	66.3	151.0	79.9	72	115	65	172	24.2	44.0	7.1	5.4	30.7

Data Set 1: Health Exam Results (*continued*)

STATDISK: Data set name for females is Fhealth.
Minitab: Worksheet name for females is FHEALTH.MTW.
Excel: Workbook name for females is FHEALTH.XLS.
TI-83/84 Plus: App name for female data is FHEALTH and the file names are the same as for text files.
Text file names for females: FAGE, FHT, FWT, FWAST, FPULS, FSYS, FDIAS, FCHOL, FBMI, FLEG, FELBW, FWRST, FARM.

Female	Age	HT	WT	Waist	Pulse	SYS	DIAS	CHOL	BMI	Leg	Elbow	Wrist	Arm
	17	64.3	114.8	67.2	76	104	61	264	19.6	41.6	6.0	4.6	23.6
	32	66.4	149.3	82.5	72	99	64	181	23.8	42.8	6.7	5.5	26.3
	25	62.3	107.8	66.7	88	102	65	267	19.6	39.0	5.7	4.6	26.3
	55	62.3	160.1	93.0	60	114	76	384	29.1	40.2	6.2	5.0	32.6
	27	59.6	127.1	82.6	72	94	58	98	25.2	36.2	5.5	4.8	29.2
	29	63.6	123.1	75.4	68	101	66	62	21.4	43.2	6.0	4.9	26.4
	25	59.8	111.7	73.6	80	108	61	126	22.0	38.7	5.7	5.1	27.9
	12	63.3	156.3	81.4	64	104	41	89	27.5	41.0	6.8	5.5	33.0
	41	67.9	218.8	99.4	68	123	72	531	33.5	43.8	7.8	5.8	38.6
	32	61.4	110.2	67.7	68	93	61	130	20.6	37.3	6.3	5.0	26.5
	31	66.7	188.3	100.7	80	89	56	175	29.9	42.3	6.6	5.2	34.4
	19	64.8	105.4	72.9	76	112	62	44	17.7	39.1	5.7	4.8	23.7
	19	63.1	136.1	85.0	68	107	48	8	24.0	40.3	6.6	5.1	28.4
	23	66.7	182.4	85.7	72	116	62	112	28.9	48.6	7.2	5.6	34.0
	40	66.8	238.4	126.0	96	181	102	462	37.7	33.2	7.0	5.4	35.2
	23	64.7	108.8	74.5	72	98	61	62	18.3	43.4	6.2	5.2	24.7
	27	65.1	119.0	74.5	68	100	53	98	19.8	41.5	6.3	5.3	27.0
	45	61.9	161.9	94.0	72	127	74	447	29.8	40.0	6.8	5.0	35.0
	41	64.3	174.1	92.8	64	107	67	125	29.7	38.2	6.8	4.7	33.1
	56	63.4	181.2	105.5	80	116	71	318	31.7	38.2	6.9	5.4	39.6
	22	60.7	124.3	75.5	64	97	64	325	23.8	38.2	5.9	5.0	27.0
	57	63.4	255.9	126.5	80	155	85	600	44.9	41.0	8.0	5.6	43.8
	24	62.6	106.7	70.0	76	106	59	237	19.2	38.1	6.1	5.0	23.6
	37	60.6	149.9	98.0	76	110	70	173	28.7	38.0	7.0	5.1	34.3
	59	63.5	163.1	104.7	76	105	69	309	28.5	36.0	6.7	5.1	34.4
	40	58.6	94.3	67.8	80	118	82	94	19.3	32.1	5.4	4.2	23.3
	45	60.2	159.7	99.3	104	133	83	280	31.0	31.1	6.4	5.2	35.6
	52	67.6	162.8	91.1	88	113	75	254	25.1	39.4	7.1	5.3	31.8
	31	63.4	130.0	74.5	60	113	66	123	22.8	40.2	5.9	5.1	27.0
	32	64.1	179.9	95.5	76	107	67	596	30.9	39.2	6.2	5.0	32.8
	23	62.7	147.8	79.5	72	95	59	301	26.5	39.0	6.3	4.9	31.0
	23	61.3	112.9	69.1	72	108	72	223	21.2	36.6	5.9	4.7	27.0
	47	58.2	195.6	105.5	88	114	79	293	40.6	27.0	7.5	5.5	41.2
	36	63.2	124.2	78.8	80	104	73	146	21.9	38.5	5.6	4.7	25.5
	34	60.5	135.0	85.7	60	125	73	149	26.0	39.9	6.4	5.2	30.9
	37	65.0	141.4	92.8	72	124	85	149	23.5	37.5	6.1	4.8	27.9
	18	61.8	123.9	72.7	88	92	46	920	22.8	39.7	5.8	5.0	26.5
	29	68.0	135.5	75.9	88	119	81	271	20.7	39.0	6.3	4.9	27.8
	48	67.0	130.4	68.6	124	93	64	207	20.5	41.6	6.0	5.3	23.0
	16	57.0	100.7	68.7	64	106	64	2	21.9	33.8	5.6	4.6	26.4