Course	ENGR 13300	Semester	Fall 2X		← -- replace the shaded text with actual values
Assignment Name		Section	XXX		← -- replace the shaded text with actual values
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Input Section:

Table 1: Measured TSS values from Lake Wilson, NC

TSS in mg/L
62.4
68.7
28.8
58.7
52.1
55.8
67
66.7
67.1
67.3
54.3
54
73.1
81.2
58.9
54.4
62.2
58.8
56.9
59
56.2
63.3
57.2
45.3
80.1
68.7
42.8
42.6
60.8
81.4
64
62.7
72.6
72.6
39.1
53.1
58.1
67.2
70.7
42.8
77.4
54.7
57.1
77.3
29.2
76.4
59.7
51.1
73.8
63.4
73.1
77.1
28.6
58.8
50.7
72
64.4
66.1
21.8

Calculation Section:

Table 2: Is TSS smaller than 65 mg/L

TSS in mg/L
=A2>=65
=A3>=65
=A4>=65
=A5>=65
=A6>=65
=A7>=65
=A8>=65
=A9>=65
=A10>=65
=A11>=65
=A12>=65
=A13>=65
=A14>=65
=A15>=65
=A16>=65
=A17>=65
=A18>=65
=A19>=65
=A20>=65
=A21>=65
=A22>=65
=A23>=65
=A24>=65
=A25>=65
=A26>=65
=A27>=65
=A28>=65
=A29>=65
=A30>=65
=A31>=65
=A32>=65
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=A62>=65
=A63>=65
=A64>=65
=A65>=65
=A66>=65
=A67>=65
=A68>=65
=A69>=65
=A70>=65
=A71>=65
=A72>=65
=A73>=65
=A74>=65
=A75>=65
=A76>=65
=A77>=65
=A78>=65

Table 3: Calculation of descriptive statistics for given TSS data

statistic	value	unit
min	=MIN(A2:A78)	mg/L
max	=MAX(A2:A78)	mg/L
range	=MAX(A2:A78)-MIN(A2:A78)	mg/L
mean	=AVERAGE(A2:A78)	mg/L
median	=MEDIAN(A2:A78)	mg/L
mode	=MODE(A2:A78)	mg/L
standard deviation	=STDEV(A2:A78)	mg/L
variance	=POWER(F21,2)	mg^2/L^2
count	=COUNT(A2:A78)	

Table 4: Computation of skewness

description		value	unit
skewness using SKEW()		=SKEW(A2:A78)	mg/L
	Is this an outlier:	**positive**	
	What about mean:	**left**	
skewness and relationship between mean and mode		=F19-F17	mg/L
	Is this an outlier:	**positive**	
	What about mean:	**right**	
Identify if there are any differences (yes or no)		yes	

Table 5: Calculation of histogram quantities

description		value	unit
number of bins using sqrt rule		=INT(SQRT(F27))	bins
bin width using sqrt rule		=F7/F43	mg/L
		7	bins
Updated values to make the histogram more presentable			
number of bins		6	bins
bin width			
bin upper limits		=INT(F19+$F$46)	
		=F20+$F$46	
		=F21+$F$46	
		=F22+$F$46	
		=F23+$F$46	
		=F24+$F$46	

Table 6: Count TSS smaller than 65 mg/L

description		value	unit
Number of TSS Measurements >64 mg/L		=COUNTIFA2(A78,"=TRUE)	measures

Output Section:

Question a)
Do the different methods for determining the skewness agree? Justify your answer.
No because the mean and mode method shows a positive skew, but the skew function gives a negative skew.

Table 7: Outputs of EXCEL Histogram Function (Analysis ToolPak)

Bin	Frequency
38	2
47	6
56	11
74	15
83	6
92	1
More	0

Question b)
How did you choose the number of bins for the histogram?
We used the equation of square root of number of count and then we rounded the number

Question c)
Indiana, like many other states, does not have a water quality standard for TSS. Review the information on TSS at http://www.in.gov/idem/npss/2484.htm. Does this lake contain reasonable amounts of suspended solids, or should action be taken to reduce the concentration of TSS? Explain your reasoning and cite in APA format additional sources you used.
This lake contains reasonable or decently reasonable amounts of TSS. The general range provided is between 25 and 80 mg/L. The measured average in this lake is 58.9 mg/L, which falls within the range. Other states have lower maximums, but some other areas also have higher maximums.