

# Math 153 - Quiz 4

September 25, 2014

Name key

Score \_\_\_\_\_

Show all work to receive full credit. Supply explanations when necessary.

(10 points) The data below show the maximum daily air temperatures (in °F) measured at the DeKalb, IL weather station in January 2013 and January 2014. For each year, find the quartiles, the interquartile range, and the outlier cutoff values. Construct and compare the modified boxplots, indicating outliers with asterisks.

Day	Jan 2013	Jan 2014
1	19.0	19.2
2	30.5	11.5
3	26.5	18.8
4	33.2	30.3
5	35.3	20.7
6	34.1	-6.9
7	39.7	2.2
8	42.8	8.5
9	46.0	25.4
10	42.2	37.2
11	49.4	36.4
12	49.5	38.7
13	24.9	38.9
14	22.8	34.4
15	27.6	19.7
16	32.7	34.0
17	31.8	15.6
18	39.4	19.3
19	45.6	41.1
20	22.3	35.0
21	11.2	10.5
22	10.8	14.5
23	19.6	4.4
24	19.7	27.9
25	30	33.0
26	24.6	30.1
27	34.2	1.5
28	43.3	3.5
29	61.9	21.5
30	40.3	30.8
31	17.5	17.1

From CALCULATOR ...

JAN 2013

$$MIN = 10.8$$

$$Q_1 = 22.8$$

$$MED = 32.7$$

$$Q_3 = 42.2$$

$$MAX = 61.9$$

$$IQR = 42.2 - 22.8 = 19.4$$

CUTOFFS :

$$22.8 - 1.5(19.4) = -6.3$$

$$42.2 + 1.5(19.4) = 71.3$$

No OUTLIERS

JAN 2014

$$MIN = -6.9$$

$$Q_1 = 11.5$$

$$MED = 20.7$$

$$Q_3 = 34$$

$$MAX = 41.1$$

$$IQR = 34 - 11.5 = 22.5$$

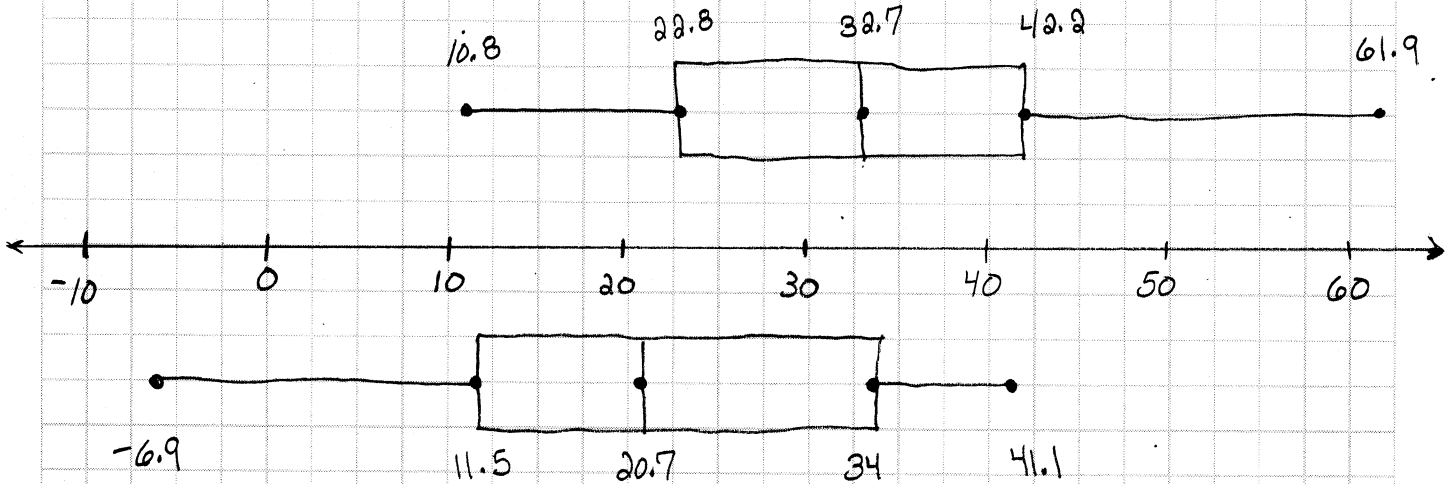
CUTOFFS :

$$11.5 - 1.5(22.5) = -22.25$$

$$34 + 1.5(22.5) = 67.75$$

No OUTLIERS

JAN 2013



JAN 2014

JAN 2013 WAS SIGNIFICANTLY WARMER  
THAN JAN 2014. APPROXIMATELY  
25% OF 2013 TEMPS WERE GREATER  
THAN THE MAX 2014 TEMP.

