Unit 7: Test Review Name key

This data set gives the number minutes it takes students to get to school in the morning:

7, 75, 32, 45, 15, 18, 21, 24, 5, 15, 37, 25, 17, 29, 73

1) Create a stem-and-leaf plot of the data.

n = 15 data pieces (students)

COMMUTE TO SCHOOL

Stem	Leaves
0	5 7
1	5 5 7 8
2	1 4 5 9
3	2 7
4	5
5	
6	
7	3 5

Key: 0|5 = 5 minute commute

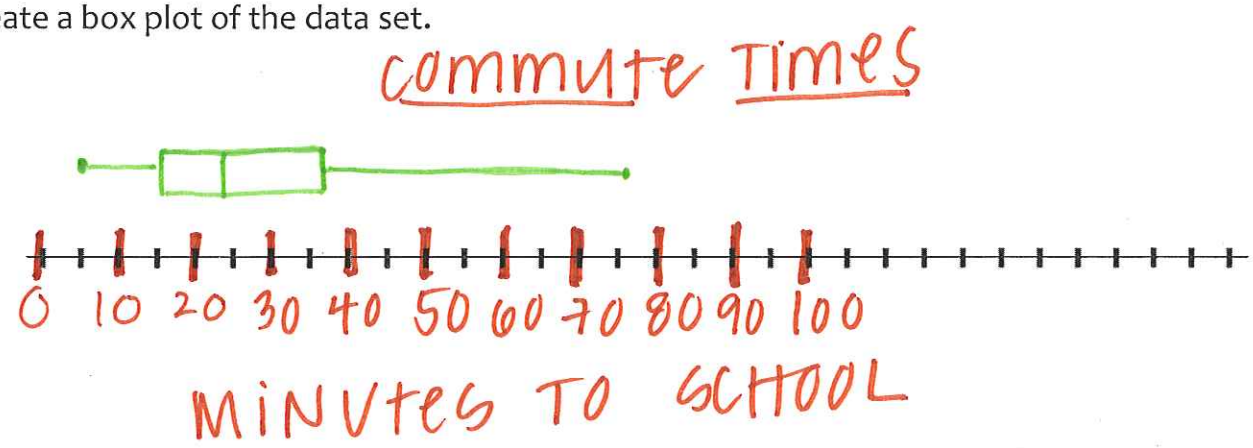
min 5 7 15 15 17 18 21 24 25 29 32 37 45 73 75 max

Q1 median Q3

2) i. Use your calculator to find the 5 # summary.

Min 5 Q_1 15 Median 24 Q_3 37 Max 75 IQR 22 (37 - 15)

ii. Create a box plot of the data set.



iii. Analyze the box plot. Complete the sentences:

"Fifty percent of the students travel between 15 and 37 minutes to get to school."

"25% percent of the students travel more than 37 minutes."

3) Calculate any outliers in the data set.

Outlier $< Q_1 - 1.5IQR$

Outlier $> Q_3 + 1.5IQR$

$1.5(22) = 33$

$Q_1 - 1.5IQR = 15 - 33 = -18$ minutes

-18 min commute does not make sense.

No outliers below

$Q_3 + 1.5IQR = 37 + 33 = 70$

73 and 75 min are outliers

4) i. Find the mean ($\bar{x}$) and the standard deviation, (σ). $\bar{x} \approx$ 29.2 σ ≈ 20.3

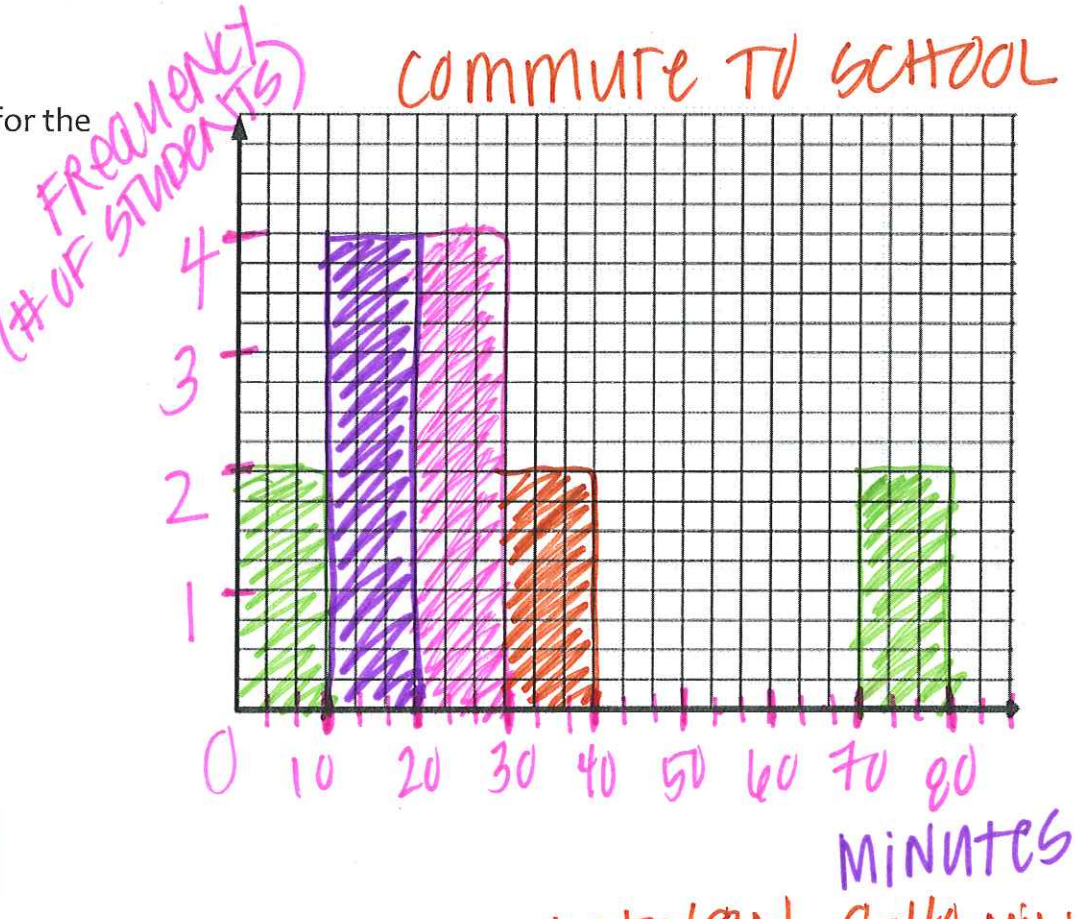
ii. Suppose students who are less than one standard deviation from the mean do not get Go-Cards. How many of the 15 students from the survey will ***not*** get a Go-Card? Explain how you got your answer.

$29.2 - 20.3 = 8.9$

Two students (5 & 7 min) will not get a bus pass

5) i. Create a histogram for the data.

Interval	# of Students
$0 \leq x < 10$	II
$10 \leq x < 20$	IIII
$20 \leq x < 30$	IIII
$30 \leq x < 40$	II
$40 \leq x < 50$	
$50 \leq x < 60$	
$60 \leq x < 70$	
$70 \leq x < 80$	II



ii. Describe the histogram.

The data is mainly between 0-40 minutes. The modal classes are 10-20 & 20-30 minutes. A couple students live far away! 10-30 min is a reasonable commute.