Stat Unit Part A
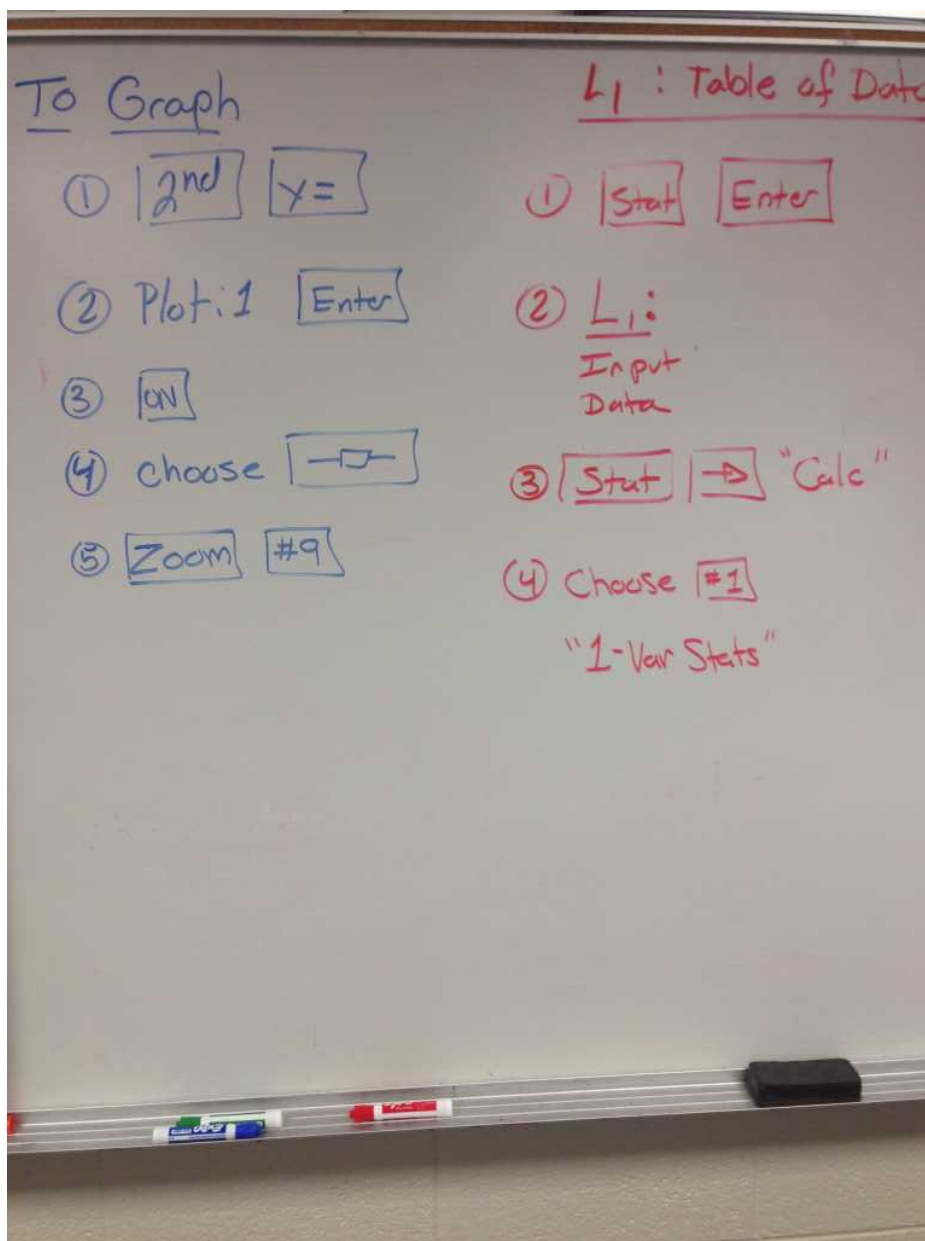
Test Review Answers

2nd period

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⟶

Name: _____

1. Year 2000 salaries for the Los Angeles Lakers:

Shaquille O'Neal	$17.1 million	Ron Harper	$2.1 million
Kobe Bryant	$11.8 million	A.C. Green	$2.0 million
Robert Horry	$5.0 million	Devean George	$1.0 million
Glen Rice	$4.5 million	Brian Shaw	$1.0 million
Derek Fisher	$4.3 million	John Salley	$0.8 million
Rick Fox	$4.2 million	Tyronne Lue	$0.7 million
Travis Knight	$3.1 million	John Celestand	$0.3 million

a. Find the mean ($\bar{x}$). Show work. 4.1 (4)

b. Find the standard deviation σ_x. List each step that you are doing. (Not calculator steps, conceptual steps.)

$\sigma_x = 4.5889$

≈ (5)

```
1-Var Stats
x̄=4.135714286
Σx=57.9
Σx²=534.27
Sx=4.762127376
σx=4.588900762
↓n=14
```

c. Find the range. Show work.

17.1 - .3 = 16.8 million ≈ 17 million

2. The distribution of heights of adult American men is approximately normal (has a bell-shaped distribution) with mean 69 inches and standard deviation of 2.5 inches. Draw and label the distribution. Then answer the questions below.

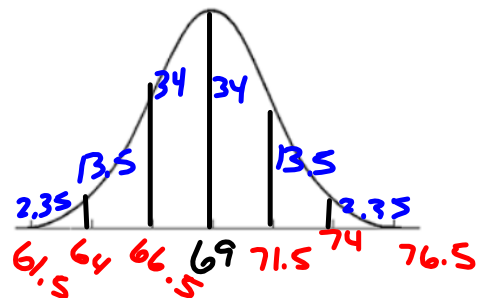a. What percent of men are taller than 74 inches?

2.35 + .15 = 2.5

b. Between what heights do the middle 95% of men fall?

±2 sd.   64 to 74

c. What percent of men are shorter than 66.5 inches?

13.5 + 2.35 + .15

13.5 + 2.5 = 16%

34 34
13.5 13.5
2.35 2.35
61.5 64 66.5 69 71.5 74 76.5

3. Scores on the Weschler Adult Intelligence Scale (a standard "IQ" test) for the 20 to 34 age group are approximately normally distributed with a mean of 110 and a standard deviation of 25. Draw and label the distribution. Then answer the questions below.

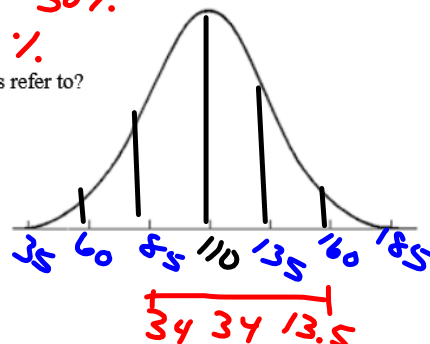a. What percent of the people in this age groups have scores above 110?   50%

b. About what percent have scores between 85 and 160?   81.5%

c. If a "low" score is below 60, what percent of the people does this refer to?   2.5%

35 60 85 110 135 160 185
34 34 13.5

Name: _____

Use the following data set to work problems 1 – 3.

Average number of commercials from 1 hour of listening to the radio
17   16   37   18   13   9   18   15   14   21   7   10   11   20   5
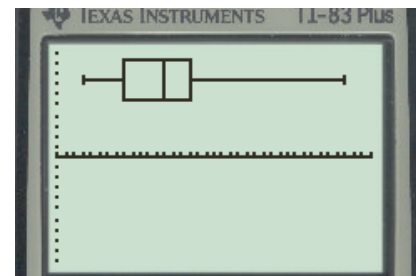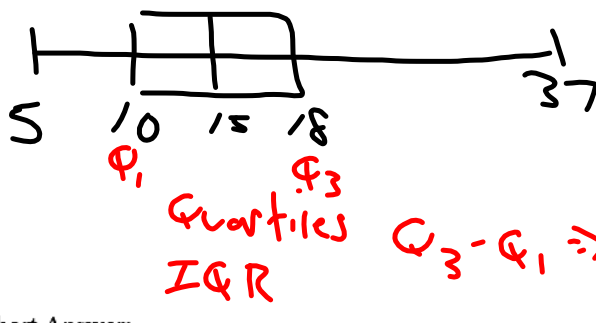
1. Find the 5-number summary for the data set.

min = 5 Q_3 = 18

Q_1 = 10

med = 15   max = 37

```
1-Var Stats
↑n=15
 minX=5
 Q₁=10
 Med=15
 Q₃=18
 maxX=37
■
```

2. Find the IQR of the data set. Show your work.

18-10   IQR = 8

3. Construct a box-and-whisker plot of the data set. Use a ruler.

TEXAS INSTRUMENTS   TI-83 Plus

5   10   15   18   37

Q_1 Q_3
Quartiles $Q_3 - Q_1 \Rightarrow$ 18-10
IQR   = 8

Short Answer:

4. When working with quartiles, what percent of the data

   a. is above the third quartile? ___25%___

   b. below the second quartile? ___50%___

   c. between the first and third quartile? _____

   25% 25%
   25%   25%
   Q_1 Q_3
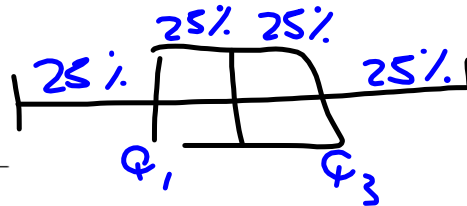
5. You have received your results from a cardiovascular test that you had to take. The results stated that you scored in the 85th percentile of your age group. Using complete sentences, explain what this means.

3$\underline{^{rd}}$ period
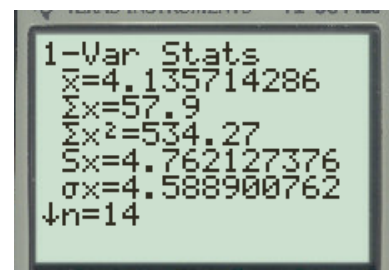
$\longrightarrow$

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Name: _____

1. Year 2000 salaries for the Los Angeles Lakers:

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Rick Fox	$4.2 million	Tyronne Lue	$0.7 million
Travis Knight	$3.1 million	John Celestand	$0.3 million

   a. Find the mean ($\bar{x}$). Show work.   = 4.1   or   ≈ ④

   b. Find the standard deviation σ_x. List each step that you are doing. (Not calculator steps, conceptual steps.)
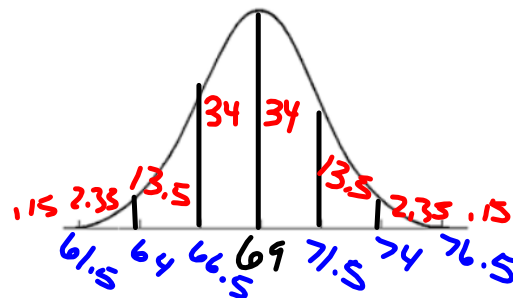
   $\sigma_x = 4.5889$
   ≈ ⑤

   ```
   1-Var Stats
   x̄=4.135714286
   Σx=57.9
   Σx²=534.27
   Sx=4.762127376
   σx=4.588900762
   ↓n=14
   ```

   c. Find the range. Show work.

2. The distribution of heights of adult American men is approximately normal (has a bell-shaped distribution) with mean 69 inches and standard deviation of 2.5 inches. Draw and label the distribution. Then answer the questions below.

   a. What percent of men are taller than 74 inches?
   2.35 + .15 = 2.5

   b. Between what heights do the middle 95% of men fall?
   ±2 sd   64 to 74

   c. What percent of men are shorter than 66.5 inches?
   13.5 + 2.5 = 16%

3. Scores on the Weschler Adult Intelligence Scale (a standard "IQ" test) for the 20 to 34 age group are approximately normally distributed with a mean of 110 and a standard deviation of 25. Draw and label the distribution. Then answer the questions below.

   a. What percent of the people in this age groups have scores above 110?   50%

   b. About what percent have scores between 85 and 160?   81.5 %

   c. If a "low" score is below 60, what percent of the people does this refer to?

   .15 + 2.35 = 2.5 %
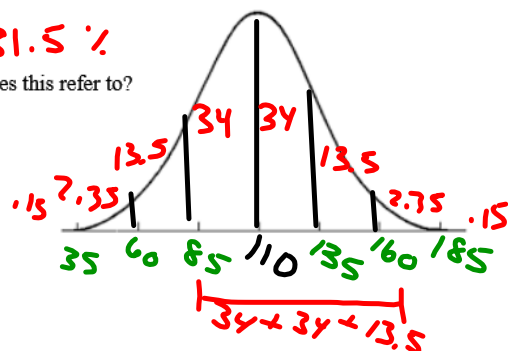
6

Name: _____

Use the following data set to work problems 1 – 3.
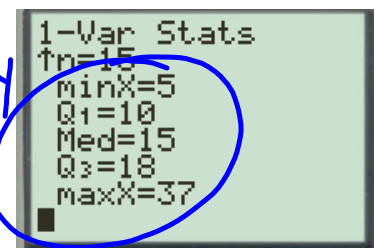
Average number of commercials from 1 hour of listening to the radio

17   16   37   18   13   9   18   15   14   21   7   10   11   20   5

1. Find the 5-number summary for the data set.

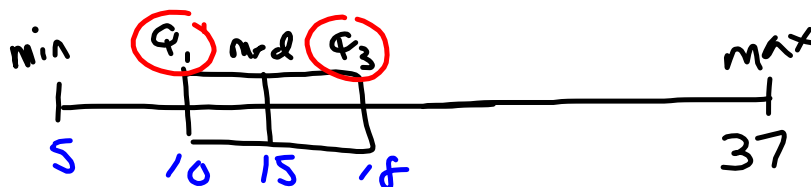$min = 5$ $Q_1 = 10$ 5 # summary
$max = 37$ $med = 15$
                      $Q_3 = 18$

```
1-Var Stats
↑n=15
minX=5
Q₁=10
Med=15
Q₃=18
maxX=37
▪
```

2. Find the IQR of the data set. Show your work.

Inter-quartile Range $18 - 10 = 8$

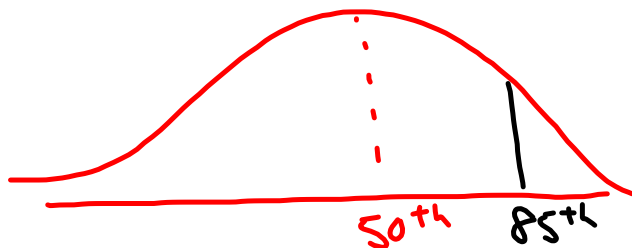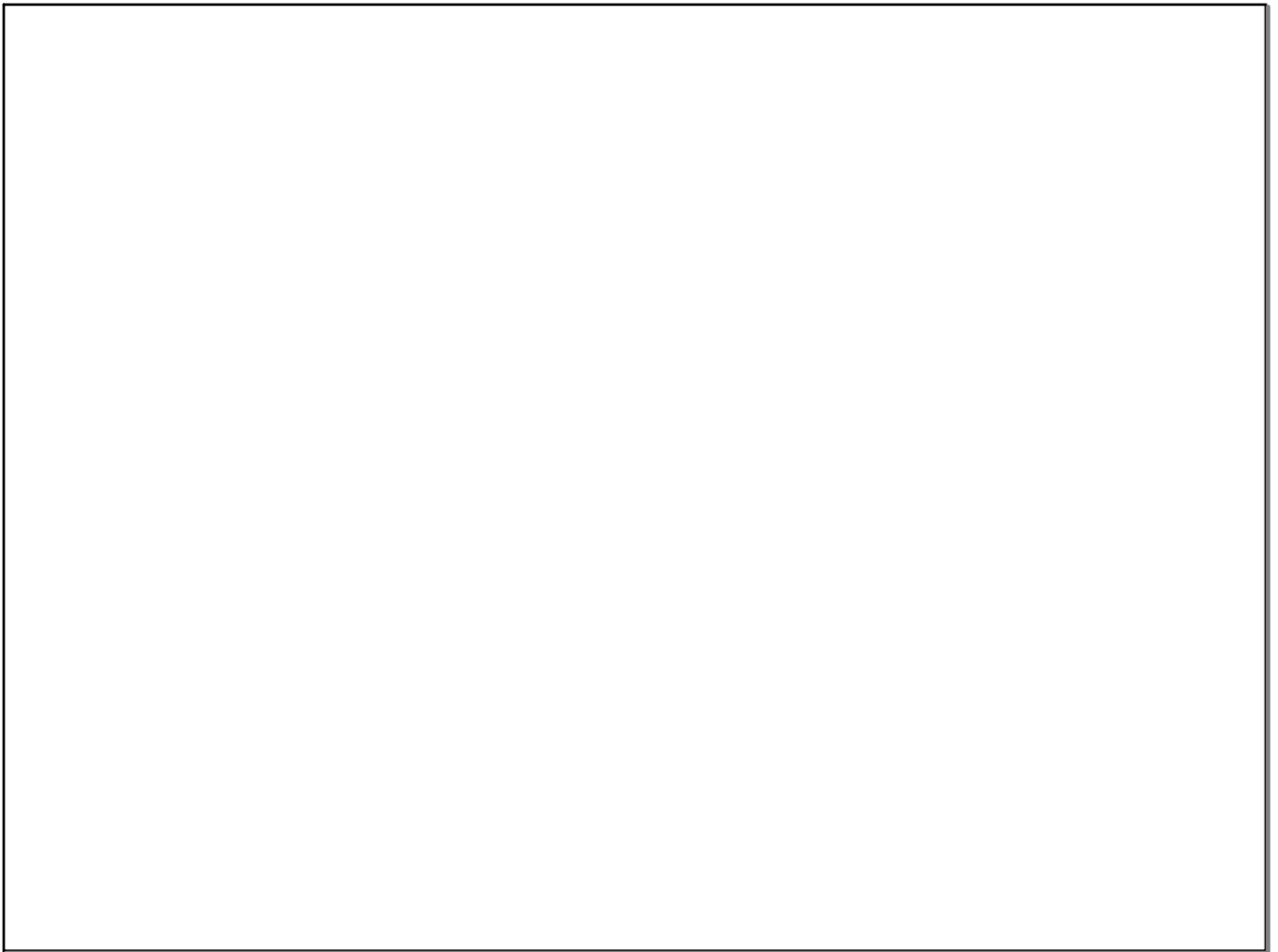3. Construct a box-and-whisker plot of the data set. Use a ruler.

min Q_1 med Q_3 max

5   10   15   18   37

Short Answer:

4. When working with quartiles, what percent of the data

    a. is above the third quartile? ___25%___
    b. below the second quartile? ___50%___
    c. between the first and third quartile? ___50%___

                                              med.
                              Q_1 Q_2 Q_3 max
    min
                     25%   25%   25%   25%

5. You have received your results from a cardiovascular test that you had to take. The results stated that you
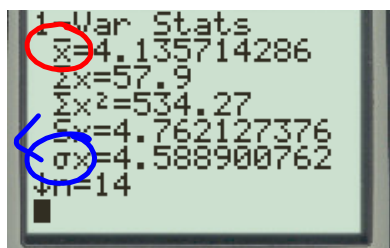   scored in the 85th percentile of your age group. Using complete sentences, explain what this means.

50th   85th

Dec 9-9:12 AM

Name: _____

1. Year 2000 salaries for the Los Angeles Lakers:

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Rick Fox	$4.2 million	Tyronne Lue	$0.7 million
Travis Knight	$3.1 million	John Celestand	$0.3 million

a. Find the mean ($\bar{x}$). Show work.   4.1 or ④

Variance

$(\sigma_x)^2$

$(5)^2 = 25$

b. Find the standard deviation σ_x. List each step that you are doing. (Not calculator steps, conceptual steps.)

4.5889

⑤

```
1-Var Stats
x̄=4.135714286
Σx=57.9
Σx²=534.27
Sx=4.762127376
σx=4.588900762
n=14
```
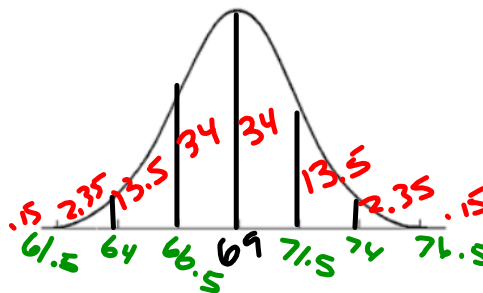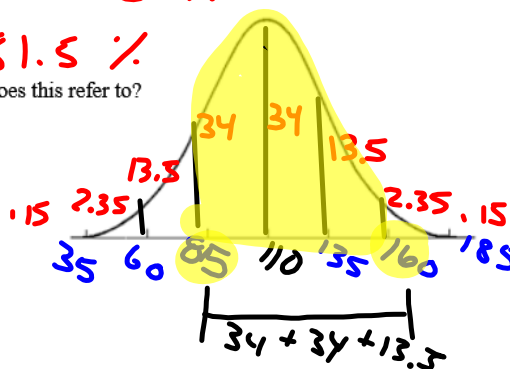
c. Find the range. Show work.

2. The distribution of heights of adult American men is approximately normal (has a bell-shaped distribution) with mean 69 inches and standard deviation of 2.5 inches. Draw and label the distribution. Then answer the questions below.

a. What percent of men are taller than 74 inches?

2.5 %

b. Between what heights do the middle 95% of men fall?

±2sd   64 to 74

c. What percent of men are shorter than 66.5 inches?

.15 + .2.35 + 13.5

16%

.15 2.35 13.5 34 34 13.5 2.35 .15
61.5 64 66.5 69 71.5 74 76.5

3. Scores on the Weschler Adult Intelligence Scale (a standard "IQ" test) for the 20 to 34 age group are approximately normally distributed with a mean of 110 and a standard deviation of 25. Draw and label the distribution. Then answer the questions below.

a. What percent of the people in this age groups have scores above 110?   50%

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c. If a "low" score is below 60, what percent of the people does this refer to?

2.5%

.15 2.35 13.5 34 34 13.5 2.35 .15
35 60 85 110 135 160 185
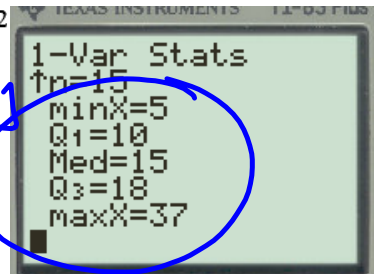
34 + 34 + 13.5

Name: _____

Use the following data set to work problems 1 – 3.

Average number of commercials from 1 hour of listening to the radio

17   16   37   18   13   9   18   15   14   2 ... 5

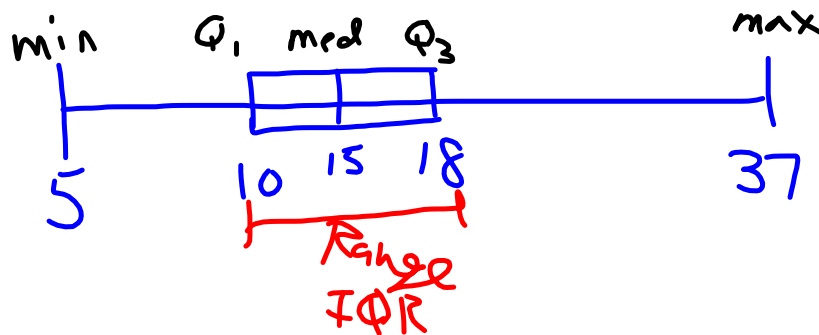1. Find the 5-number summary for the data set.

5 # Summary

1-Var Stats
$\bar{x}$=15
minX=5
Q_1=10
Med=15
Q_3=18
maxX=37

2. Find the IQR of the data set. Show your work.

8   **Quartile** Q_3 & Q_1

Range $Q_3 - Q_1 \Rightarrow 18 - 10 = 8$

3. Construct a box-and-whisker plot of the data set. Use a ruler.

min Q_1 med Q_3 max

5   10   15   18   37

Range
IQR

Short Answer:

4. When working with quartiles, what percent of the data

   a. is above the third quartile? __25%__
   b. below the second quartile? __50%__
   c. between the first and third quartile? __50%__

25% 25%
25%   25%
50%
Q_1 Q_2 Q_3

5. You have received your results from a cardiovascular test that you had to take. The results stated that you scored in the 85th percentile of your age group. Using complete sentences, explain what this means.

50th   85th

Dec 9-9:12 AM