

# Chapter 6 Modeling Data Practice Test

Name Key

For questions 1-4 use the following information. Customers at the local food court:

~~141, 128, 132, 141, 152, 169, 121, 133, 131, 156, 142, 136, 135, 144, 135, 153,~~

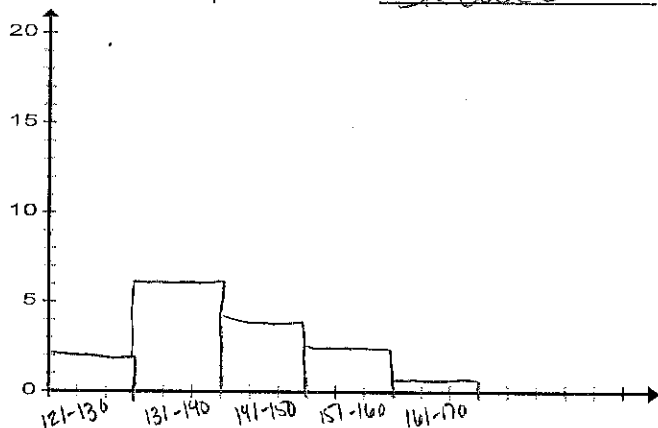
121, 128, 131, 132, 133, 135, 135, 136, 141, 141, 142, 144, Customers Frequency 152, 153, 156, 169

1. Use the data to make a frequency table. Use intervals of  $\frac{10}{10}$ .

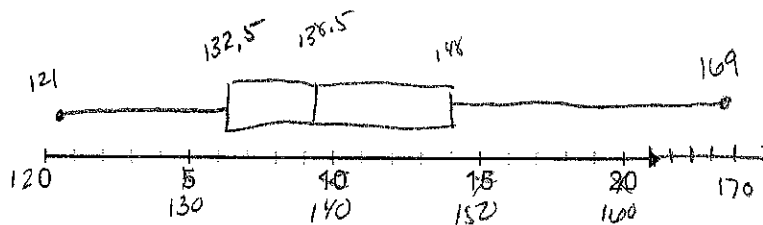
Customers	Frequency
121-130	2
131-140	6
141-150	4
151-160	3
161-170	1

2. Draw a Histogram for the given information with an interval of  $\frac{10}{10}$ .

Describe the shape of the data Skewed



3. Draw a Box-and-Whisker Plot for the given information.



4. Using the given information, determine the following:

Mean: 140.56

Standard Deviation: 11.7

Median: 138.5

Mode: 135, 141

Range: 48

Interquartile Range: 15.5

Which measure of central tendency is the best?

Why? Mean, no outlier

5. Describe the shape of the distribution.

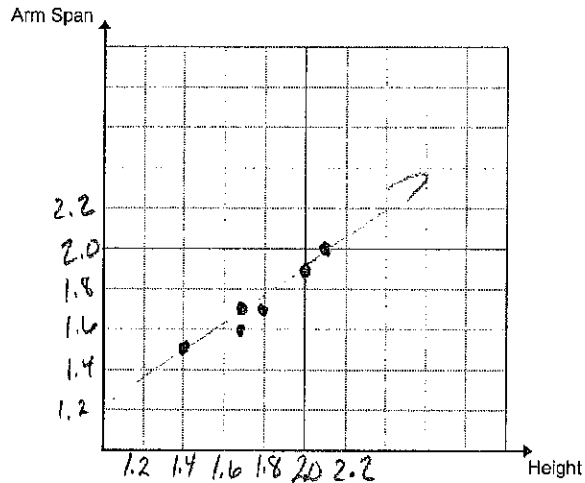
5a. Skewed



5b. Symmetric

Use the data below for questions 6-9.

Heights and Arm Spans						
Height (m)	1.5	1.8	1.7	2.0	1.7	2.1
Arm Span (m)	1.4	1.7	1.7	1.9	1.6	2.0



6. Make a scatter plot of the data above. Draw a line of best fit. Determine if the relationship has Positive, Negative or no correlation.

6. Positive

7. Write the linear function for the line of best fit.

7.  $y = 0.96x - 0.01$

8. What is the correlation coefficient ( $r$ ) for your linear regression?

8.  $r = 0.9825$

What does this mean?

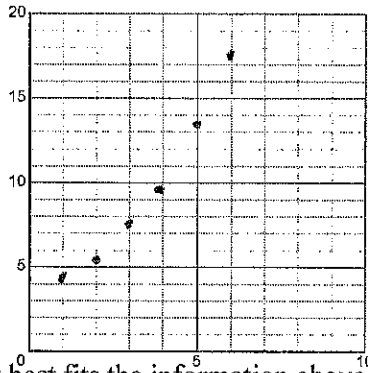
Very good fit to data

9. Predict the arm span of someone who is 2.2m tall.

9. about 2.1m

10. For the given information below, is a linear regression or exponential regression best? Why? (6 pts.)

X	Y
1	4.1
2	5.4
3	7.3
4	9.93
5	13.51
6	17.9
7	24.6



10. Exponential  
better correlation Coefficient

L:  $y = 3.31x - 1.4$   
 $r = .967$   
E:  $y = 3 \cdot 1.35^x$   
 $r = .9999$

11. Write the equation that best fits the information above.

State the correlation coefficient (r). (6 pts.)

12. If  $x=10$ , predict y using your equation.

13. For the given information below, is a linear regression or exponential regression best? Why? (6 pts.)

Ryan practices throwing darts. From each distance listed below, he throws 10 darts and records how many times he hits the center.

Distance (in feet)	2	5	7	8	10	12	15
Number of Center Hits	10	9	8	6	5	1	2

11.  $y = 3 \cdot 1.35^x$   
 $r = .9999$

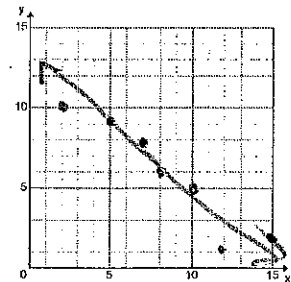
12. 60.32

13. Linear

Better Correlation Coefficient

L:  $r = -.9422$   
E:  $r = -.8433$

14. Make a scatter plot of the data. Draw the trend line. (4 pts)



15. Write the equation that best fits the information above.  
State the correlation coefficient (r). (6 pts)

16. How many hits do you estimate Ryan would make from 9 feet? (6 pts)

15.  $y = -.74x + 12.1$   
 $r = -.9422$

16. About 5-6 hits

