

Looking at Data-Relationships

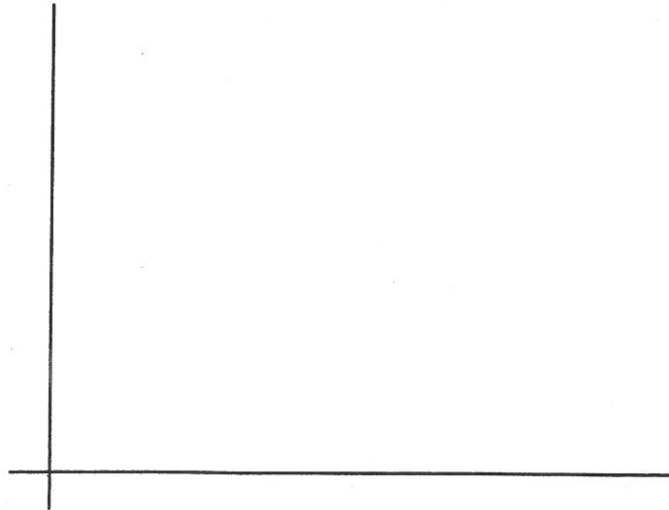
Project 3 TEST YOUR MEMORY



- How well do you know the ages of the stars and celebrities that you hear or see on a regular basis? You are to complete the following table with what you believe to be each person's age. After we have completed the list, you will be given their actual ages.

Name	Your guess of the age	Actual age	Residual	Absolute value of residual	Residual squared
George W. Bush					
Catherine Zeta Jones					
Nick Carter					
Drew Bledsoe					
Whoopi Goldberg					
Al Gore					
Richard Dreyfus					
Ronald Reagan					
Doug Flutie					
Julia Roberts					
Drew Barrymore					
Mr(s). Math					

2. Now that you have filled in your guess, your instructor will give you their actual ages.
3. To see how you have done we will analyze the differences between their actual age and your guess. In the space below draw a coordinate axis system and plot the ordered pairs (X, Y) where X is the actual age and Y is your guess.



4. Now sketch the line $Y = X$. If your points fall on the line, then you have correctly guessed the ages. If your point is not on the line, then you are to draw a vertical line from your point to the line. The distance of each of these segments is a residual for that guess. List these directed distances in the residual column next to the guess.
5. Did you tend to underestimate, overestimate, or bounce around the line?
6. Sum the residual column. Does your answer tell you how well you guessed the ages overall? Why or why not?

7. There are two choices to consider arriving at a meaningful sum for this data.
- a) Take the absolute value of each value and then find the sum.
 - b) Square each residual and then find the sum of the squares.
8. You must decide as a class or a group which procedure above to use as the criteria for the next question.
9. Compare your results with the rest of the class and decide who has the "best" knowledge of the stars' ages.
10. Now use your TI-83 to do this problem. Use the STAT menu to enter the actual age of the star in L1 and your guess in L2.
- In the STAT PLOT menu, make a scatterplot of the data using L1 as the Xlist and L2 as the Ylist. Choose ZOOM STAT to make a user-friendly window.
 - Use the Y= menu to enter the equation $Y1 = X$ and press the GRAPH key.
 - You should now "see" the graph that you made in the above space.
 - Return to the STAT EDIT menu and define L3 as $L2 - L1$.
 - Define L4 as $ABS(L3)$.
 - Define L5 as $L3 ^ 2$.
 - The LIST menu is found by pushing 2nd STAT. Now use the MATH menu to find:
 - a) $Sum(L4) = \underline{\hspace{2cm}}$
 - b) $Sum(L5) = \underline{\hspace{2cm}}$
11. Now that you have completed the above, write your definition of residual in the space below.