Name _____          Date _____

## Boat Registrations and Manatee Deaths in Florida

According to the Fish and Wildlife Research Institute Manatee deaths caused by boats has risen from 13 in 1977 to 70 in 2007.  Manatees are large (9.8 feet long and about 1000 pounds) slow moving sea creatures.  These gentile animals feed on vegetation and live in shallow, slow-moving rivers, estuaries, saltwater bays, canals and coastal areas.

| | |
|---|---|
| 1. Scroll through the data and predict what you think the relationship is between the number of registered boats (column C) and the number of manatee deaths by boats (column D) | <br><br>**RAD AUTO REAL**<br><br>A year / B de.. / C boats / D bo.. / E / F<br><br>1   1977   114   447000   13<br>2   1978   84    460000   21<br>3   1979   77    481000   24<br>4   1980   63    498000   16<br>5   1981   116   513000   24<br><br>A1   1977 |
| 2. Make a scatter plot to observe the relationship visually.  Don't forget to change the graph to a scatter plot and zoom data. | **RAD AUTO REAL**<br><br>13.29<br><br>2<br><br>-20          2          20<br><br>s1   x←          y← |
| 3. Is there a correlation between the number of registered boats and the manatee deaths?  Predict the correlation. | _____<br>_____<br>_____ |

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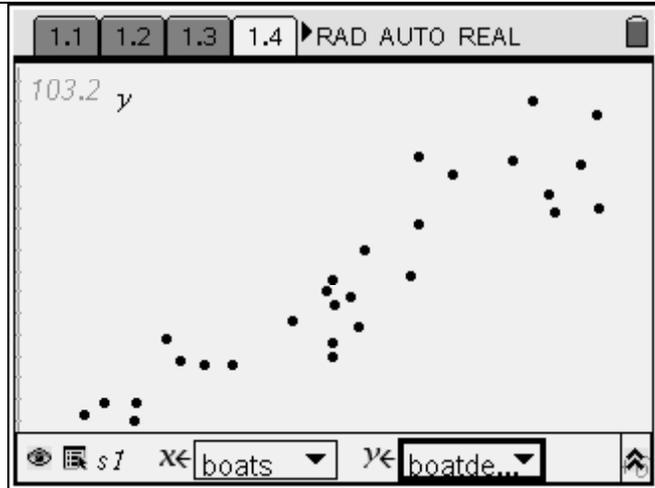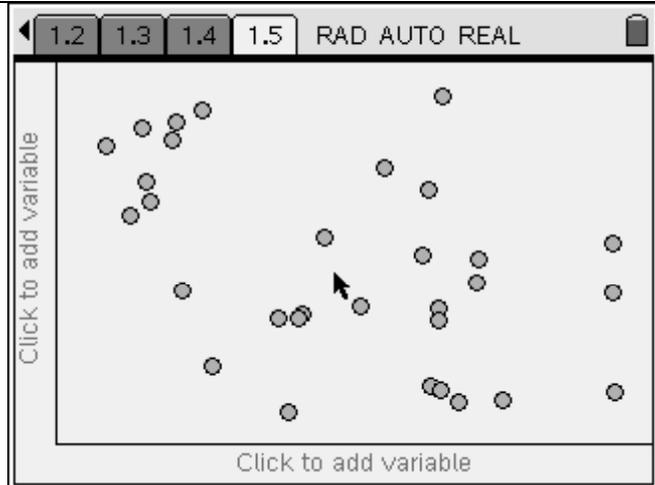| 4. Go to screen 1.3. Calculate the correlation and line of best fit using statistics (push menu). What is the correlation? _____ What is the line of best fit? _____ Based on the correlation and the data would you fell comfortable using the line of best fit to make predicts for the future? Why or why not? _____ _____ _____ | 1.1 1.2 1.3 1.4 ▶RAD AUTO REAL<br><br>A boats  B bo...  C    D    E    F<br><br>1  447000   13<br>2  460000   21<br>3  481000   24<br>4  498000   16<br>5  513000   24 |
|---|---|
| 5. Revisit the graph of the data. Change the graph to a function graph and graph the line of best fit. | 1.1 1.2 1.3 1.4 ▶RAD AUTO REAL<br><br>103.2 y<br><br>◉ ▣ s1  x←boats ▼  y←boatde... ▼ |
| 6. Based on your calculations predict the number of manatee deaths for 2008 _____ |  |
| 7. Explore the data and statistics screen. Place your cursor on the click to add variable at the bottom of the graph and change the variable to boats. Place your cursor on the click to add variable at the side of the graph and change it to boat deaths. Push the menu key and go to action. Go to regression and choose show linear (a+bx). Compare the graph with screen 1.4. They should be the same. This is just another feature to explore. | 1.2 1.3 1.4 1.5  RAD AUTO REAL<br><br>Click to add variable<br><br>Click to add variable |

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| 8. Brainstorm some ways to help the manatee.  Boating is a favorite past time in Florida so getting rid of the boats isn't an option.  What else can Florida do to save the manatee? <br><br> _____ <br> _____ <br> _____ <br> _____ <br> _____ | _____ <br> _____ <br> _____ <br> _____ <br> _____ <br> _____ <br> _____ <br> _____ <br> _____ <br> _____ |