Name_____ Date_____

LAB 4D: Interpreting Correlations
Response Sheet

Directions: Record your responses to the lab questions in the spaces provided.

Some background...

Correlation coefficients

- **Are these variables linearly related? Why or why not?**

Correlation review I

- **Does this plot have a positive or negative correlation?**

Correlation review II

- **What do you guess the correlation coefficient will be for these two variables?**

The movie data

Calculating Correlation Coefficients!

Now answer the following

- **What was the value of the correlation coefficient you calculated?**

- **How does this actual value compare with the one you estimated previously?**

- **Does this indicate a strong, weak, or moderate association? Why?**

- **How would the scatterplot need to change in order for the correlation to be stronger?**

- **How would it need to change in order for the correlation to be weaker?**

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Correlation and Predictions

– **Use the correlation coefficient to determine which variable has a stronger linear relationship with `critics_rating`.**

– **Use the MSE to determine which variable is a better predictor of `critics_rating`.**

- **How are the correlation coefficient and the MSE related?**

On your own

– **Would calculating a correlation coefficient for the two variables be appropriate? Justify your answer.**

– **Predict what value you think the correlation coefficient will be. Compare this value to the actual value. Finally, interpret what the actual correlation coefficient means.**

- **Work with your classmates to determine which two variables have the strongest correlation coefficient. Write them down.**

– **Why do you think these variables are so strongly related? Is using the correlation coefficient to describe the relationship appropriate and why/why not?**