Name: _____ Hour: _____ Date: _____

Barbie Bungee – The Finale

It's finally time to jump Barbie! At the end of the hour we will be dropping Barbie from the staircase in the foyer which is 17 ft. (5.2 m). Before we drop her, we will use everything we've learned this chapter to calculate the best possible length of bungee cord.

Write in your group's data in the table below.

Number of rubber bands	0	1	2	3	4	5	6	7
Lowest point head reaches (cm)								

1. Identify which variable is the explanatory variable and which is the response variable?

2. Use the Applet to create a scatterplot.

3. Describe your distribution (DUFS).

4. Estimate the *r* value of your distribution.

5. What would happen to the correlation (r) if you graphed the scatterplot with the lowest point on the horizontal axis and # rubber bands on the vertical axis?

Name: _____ Hour: _____ Date: _____

6. Calculate the correlation using SPA applets. Write it below. What is the unit of the correlation?

7. Use the Applet to find the least squares regression line for your data. Write the equation below.

8. What is the slope of your LSRL? Interpret the slope.

9. What is the *y*-intercept of your line? Interpret.

10. Use the LSRL to calculate and interpret the residual for 4 rubber bands.

11. Sketch the residual plot for your LSRL.

12. Find the r^2 value and interpret it.

13. Find the standard deviation of the residuals and interpret it.

14. Is the linear regression an appropriate model? Explain.

15. Use your model to predict the number of rubber bands Barbie will need in order to have the most exciting yet safe bungee jump from 17 ft. (518 cm)