College Algebra

Lab Activity

Scatter Plots and Linear Regressions

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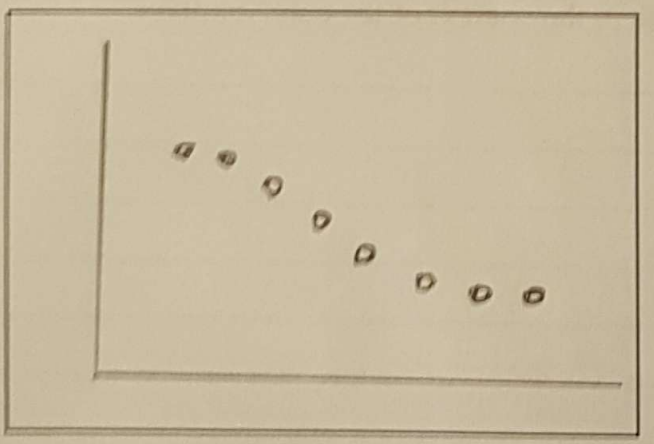
Project: (Turn in this sheet only)

The United States Bureau of the Census tracks statistics on the social, political, and economic organization of the nation. These data are published in *The Statistical Abstract of the United States*, and are also available on the Internet. The Census Bureau gathers the information by taking surveys and accessing other government and private statistical publications. Governments, businesses, research groups, companies, organizations, and individuals use the information to construct mathematical models that allow them to make predictions about future trends.

The table shows the average number of people in U.S. households from 1960 to 1995.

Year	1960	1965	1970	1975	1980	1985	1990	1995
People per household	3.35	3.32	3.14	2.94	2.76	2.69	2.63	2.65

Make a scatter plot of the data. (Use 0 for 1960, 5 for 1965 and so on). State the window setting you used.



Xmin = -1

Xmax = 9

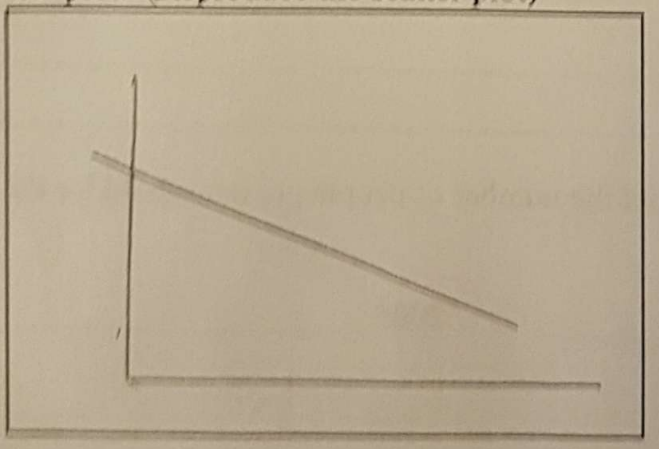
Xscl = 1

Ymin = 2

Ymax = 4

Yscl = 1

Create a linear regression for a linear model. Draw the linear regression equation on the scatter plot. (Reproduce the scatter plot)



Write the equation:

$y = ax + b$

(Round all values to 3 decimal places)

$a = -119.019$

$b = 3.472$

(Over)

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Write the equation: $-.119X + 3.472$

{Round all values to 3 decimal places}

What is the slope of the line? _____

What does the slope of the line tell you about the average size of U.S. households? _____

What is the x-intercept of the line? _____

Does an x-intercept make sense in the context of the data? Explain.

Using your linear model, predict the number of people per household for the years 2000 and 2005.

2000 _____ 2005 _____