IB Pre HL 21C Line of Best Fit – Manually Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The chart shows the state population over a period of years.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Year | 1986 | 1990 | 1992 | 1994 | 1997 | 2000 | 2004 |
| Population  (in 100,000s) | 15 | 18.2 | 20.8 | 24.5 | 26.7 | 30 | 33 |

a. Define variables for this data.

b. Make a scatter plot for the data on graph paper.

c. Find the mean point for the data.

d. Draw a line of best fit through the mean point.

e. Write the equation for your line.

f. What does the y-intercept for your equation represent?

g. What does the slope for your equation represent?

h. Use your equation to approximate the state population in 1995.

i. According to your equation, what will the state population be in 2010?

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Linear Regression and Pearson’s Correlation Coefficient Calculator Directions

|  |  |
| --- | --- |
| **TI-Nspire**   * New Document, 4: Add Lists & Spreadsheet * Optional: Name the columns (e.g., time and height ) in the top box with a letter. * Enter the data. * Menu, 4: Statistics, 1: Stat Calculations, 3: Linear Regression (mx+b) * X List: time (or a[] if not named) * Y List: height (or b[] if not named) * OK | **TI-83/84**   * Turn Diagnostics on (you only need to do this once): 2nd, CATALOG, D, DiagnosticOn, Enter, Enter * STAT, EDIT * Clear any lists that have values:   Arrow up to highlight list name (L1), CLEAR, ENTER   * Enter the data (x-values in L1, y-values in L2). * Quit to the home screen * STAT, CALC, 4: LinReg(ax+b) |

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