

Final Score: \_\_\_\_\_

Name: \_\_\_\_\_

How fast is the state population growing?

State: \_\_\_\_\_

Project Score Sheet

Equation Form (1 point each – total 4 points)

- 1. Linear:  $y = mx + b$  \_\_\_\_\_
- 2. Quadratic:  $y = ax^2 + bx + c$  \_\_\_\_\_
- 3. Cubic Polynomial:  $y = ax^3 + bx^2 + cx + d$  \_\_\_\_\_
- 4. Quartic Polynomial:  $y = ax^4 + bx^3 + cx^2 + dx + e$  \_\_\_\_\_

Equation Correct (2 Points each – total 8 points)

- 1. Linear (each number must be accurate to nearest hundredth) \_\_\_\_\_
- 2. Quadratic (each number must be accurate to nearest hundredth) \_\_\_\_\_
- 3. Cubic (each number must be accurate to nearest hundredth) \_\_\_\_\_
- 4. Quartic (each number must be accurate to nearest hundredth) \_\_\_\_\_

y-intercept/meaning relative to project/Makes sense explanation (1 points each – total 8 points)

- 1. Linear:
  - a. Y-intercept (consistent and accurate to nearest hundredth) \_\_\_\_\_
  - b. Explanation of what does the y-intercept means relative to the data. \_\_\_\_\_
- 2. Quadratic
  - a. Y-intercept (consistent and accurate to nearest hundredth) \_\_\_\_\_
  - b. Explanation of what does the y-intercept means relative to the data. \_\_\_\_\_
- 3. Cubic
  - a. Y-intercept (consistent and accurate to nearest hundredth) \_\_\_\_\_
  - b. Explanation of what does the y-intercept means relative to the data. \_\_\_\_\_
- 4. Quartic
  - a. Y-intercept (consistent and accurate to nearest hundredth) \_\_\_\_\_
  - b. Explanation of what does the y-intercept means relative to the data. \_\_\_\_\_

Linear Rate (2 points each – total 4 points)

- 1. Rate with proper units (consistent and accurate to nearest hundredth) \_\_\_\_\_
- 2. Explanation of what the linear rate means relative to the data. Use proper units. \_\_\_\_\_

Population Estimates (2 or 1 point based on accuracy – total 24 points) – Need to use your calculator.

2 points if within 4 people; 1 point if within 8 people

- 1. Linear: 1870 \_\_\_\_\_ 1984 \_\_\_\_\_ 2000 \_\_\_\_\_
- 2. Quad: 1870 \_\_\_\_\_ 1984 \_\_\_\_\_ 2000 \_\_\_\_\_
- 3. Cubic: 1870 \_\_\_\_\_ 1984 \_\_\_\_\_ 2000 \_\_\_\_\_
- 4. Quartic: 1870 \_\_\_\_\_ 1984 \_\_\_\_\_ 2000 \_\_\_\_\_

Compared Estimated population to actual and gave numerical difference (1 point each – total 8 points)

- 1. Linear: 1870 \_\_\_\_\_ 2000 \_\_\_\_\_
- 2. Quad: 1870 \_\_\_\_\_ 2000 \_\_\_\_\_
- 3. Cubic: 1870 \_\_\_\_\_ 2000 \_\_\_\_\_
- 4. Quartic: 1870 \_\_\_\_\_ 2000 \_\_\_\_\_

Year Estimate (5, 4, 2, or 1 point based on accuracy – total 20 points)

5 points if exact; 4 points if within 1 years; 2 points if within 2 years; 1 point if within 3 years

- 1. Linear: \_\_\_\_\_
- 2. Quadratic: \_\_\_\_\_
- 3. Cubic: \_\_\_\_\_
- 4. Quartic: \_\_\_\_\_

Graph labels and curve matches the data (0.5 points each – total 4 points)

- 1. Linear: labels \_\_\_\_\_ curve \_\_\_\_\_
- 2. Quad: labels \_\_\_\_\_ curve \_\_\_\_\_
- 3. Cubic: labels \_\_\_\_\_ curve \_\_\_\_\_
- 4. Quartic: labels \_\_\_\_\_ curve \_\_\_\_\_

Table from census bureau printed out and included with project (2 points) \_\_\_\_\_

Bulleted summary layout matches the example, typed, neat, etc (6 points) \_\_\_\_\_

Sub Total 1: (Maximum total points 88) \_\_\_\_\_

Project Extension for a possibility of an "A":  
Extrapolation and Interpolation Score Sheet

Extrapolation (7 points per population)

1. All four models are on the same graph (1 points) \_\_\_\_\_
2. Graphs were labeled using a legend (1 point) \_\_\_\_\_
3. Models have been extend in both directions to show definite distinctions (2 points) \_\_\_\_\_
4. \*In general, discusses the problems associated with extrapolating and why models may or may not be appropriate for predicting too far into the future or past. Refer to your graphs as examples of such problems. (maximum 3 points – No points if did not discuss your graphs.) \_\_\_\_\_

Interpolation (5 points per population)

1. All four models are on the same graph (1 points) \_\_\_\_\_
2. Graphs were labeled using a legend (1 point) \_\_\_\_\_
3. \*In general, discusses what criteria one would use to select or eliminate a model for interpolating the data. In that discussion you must deal with why or why not each model you have would be appropriate or not appropriate. (maximum 3 points – No points if did not discuss your graphs.) \_\_\_\_\_

Sub Total 2: (Maximum points 12) \_\_\_\_\_

Sub total 1 – Page 1: \_\_\_\_\_

Sub total 2 – Page 2: \_\_\_\_\_

**Grand Total:** \_\_\_\_\_ out of 100 points