

PRACTICAL PART:**1. (Modeling the Area of Garden Plots)**

Anne and Kay plan to use 600 feet of fencing to construct two large rectangular garden plots along a river with the plots sharing a common side and no fence along the river. The overall dimensions can vary a bit, but they want to ensure that the total enclosed area is at least 20000 ft^2 .

2. (Modeling the Weight of a Person with a Given Mass)

Consider the weight, or force of gravitational attraction, of a person with a given mass.

- a. How does the force of gravitational attraction between a 75 kg person and Earth vary as a function of the person's height above the surface of Earth?
- b. How does the force at sea level compare to the force when the person is in a jet at 30000 ft?
- c. How far above the surface of Earth would the person have to be for the force to be half as much as the force at sea level?

3. (Interpolation and Extrapolation)

Based on the table below, explain the notion of interpolating a value from a table and extrapolating a value from a table.

Year	Population
1950	151 325 798
1960	179 323 175
1970	203 302 031
1980	226 542 199
1990	248 709 873
2000	281 421 906
2010	308 745 538