

Problem 1. (5 points) Approximate $8.001^{2/3}$ using linear approximation. Make sure to state your function and base point.

Problem 2. (5 points) The city of Circleville is very symmetric, so it's shaped like a circle whose radius is 5 miles. Due to population growth, the area of the city is growing at two square miles/year. How quickly is the radius of Circleville increasing?