

Winchester Population Problem  
(Growth and Decay Problem)

Here is the census data for the city of Winchester, Virginia since 1960:

1960	15,110
1970	19,429
1980	20,217
1990	21,947
2000	23,585
2010	(26,230) projected

1. During which decade was the growth the largest? \_\_\_\_\_

Why? Because the city annexed some of the land from Frederick County.

2 - 4. Use the population for 1980 as the base for the following problems.

- (2) Assuming an exponential growth model for the city of Winchester, solve for the constant and write the equation for the growth model using the population in 1980 and 1990.

---

- (3) Now use the growth model that you computed in part (2) to determine the population for Winchester in 2000. How does it compare with the actual population data?

---

- (4) Now use the growth model that you computed in part (2) to determine the population for Winchester in 2010. How does it compare with the projected population data?

---