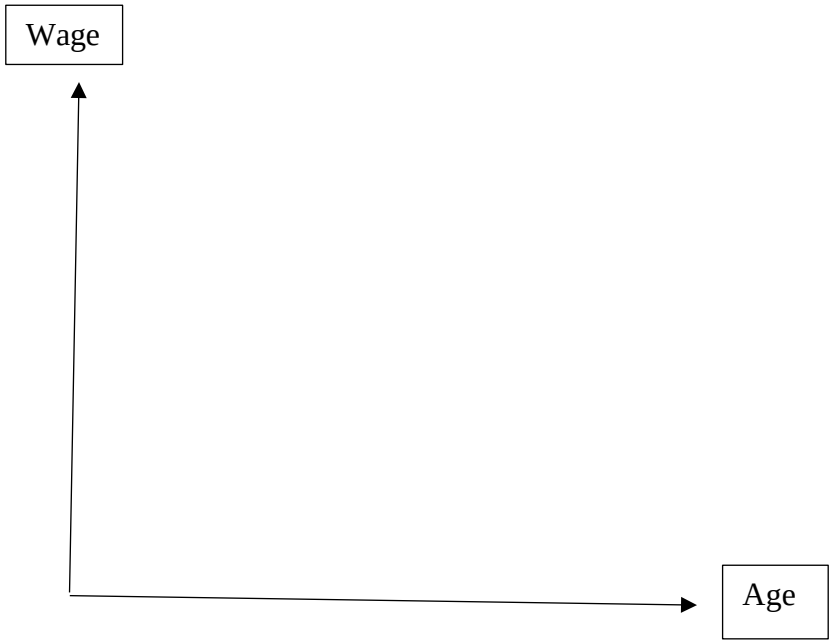
**ECO 391**
**Last Name:_____**
**First Name:_____**
**Activity #5 Credit (25 points)**
**Chapter 16.1**

Data for this activity has been uploaded on to Canvas>Modules>Data>Chapter 16 Wages

In the United States, age discrimination is illegal, but its occurrence is hard to prove *(Newsweek*, March 17, 2010). Even without discrimination, it is widely believed that wages of workers decline as they get older. A young worker can expect wages to rise with age only up to a certain point, beyond which wages begin to fall. Ioannes Papadopoulos works in the human resources department of a large manufacturing firm and is examining the relationship between hourly wages (in $), education (in years of school), and age (in years). Specifically, he wants to verify the quadratic effect of age on wages. He gathers data on 80 workers in his firm with information on their hourly wage, education, and age.

1. Do you think age could have a quadratic relationship with wages? Why?

2. In the graph below, depict your expected relationship between wages and age, and explain briefly why you think so.



3. Now, plot Wage against Age (scatterplot) on Excel. Report whether a **linear** or **quadratic** regression model better captures the relationship between wages and age by adding a trendline to your scatterplot.

4. Verify your choice by comparing the appropriate goodness-of-fit measure (tricky?!).

5. Write down your chosen regression model to predict wages.

6. Write down the regression equation with coefficient values from the regression output.

7. Use the appropriate model to predict hourly wages for someone with 16 years of education and age equals 30, 50, and 70.

8. According to this model, at what age will someone with 16 years of education attain the highest wages?