Name _____ Due Date _____ Period _____

9.4 Comparing Exponential Functions

1) Your financial advisor presents you with four plas for retirement as follows. All dollar amounts are given in millions of dollars (ie. 0.025 million is really $25,000.

Plan A:	Plan D:

Plan A:

Put in an initial investment of $0.025 million and get a return rate of 5%.

Plan B:

$$g(t) = 0.01(1.15)^t$$

Plan C:

Years	0	1	2	3	4
Money	0.02	0.022	0.0242	0.02662	0.029282

Plan D:

y-int: $(0, 0.05)$

1 year: $(1, 0.06)$

2 years: $(2, 0.072)$

a. Lists the retirement plans from the highest growth rate to the lowest growth rate.

b. List the retirement plans from the lowest initial invest ment to the highest initial investement.

c. How long will it take each retirement plan to be worth $1,000,000? (graph it)

d. Which plan is the best? Why do you think that?

e. Fill out the table evaluating each plan at a specific points in time.

	Retire after 20 years	Retire after 30 years	Retire after 40 years	Retire after 50 years
Plan A				
Plan B				
Plan C				
Plan D				

2) You are deciding between differennt amounts of student loans and your college presents you with four possible plans each with different rates at which the loan is paid off. All dollar amounts for the remaining debt are given in thousands of dollars. (ie. 30.5 thousand is really $30,500) Answer the following questions about those student loan plans.

Plan A:

Take out $250 thousand and have a payoff rate of −10%.

Plan B:

$$g(t) = 100(0.85)^t$$

Plan C:

Years	0	1	2	3	4
Money	150	135	121.5	109.35	98.415

Plan D:

y-int: (0, 300)

1 year: (1, 240)

2 years: (2, 192)

a. List the student loan plans from the fastest payoff rate to the slowest payoff rate.

b. List the student loan plans from the lowest initial debt to the highest initial debt.

c. How long will it take each student loan plan to be paid down to $1,000? (graph it)

d. Which plan do you think is the best? Why do you think?

e. Fill in the following table evaluating each plan at a specific points in time.

	Remaining debt after 10 years	Remaining debt after 15 years	Remaining debt after 20 years	Remaining debt after 25 years
Plan A				
Plan B				
Plan C				
Plan D				