

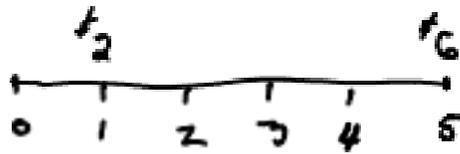
### Quiz/Test on Financial Mathematics

Part A. For each algebraic expression, describe in words the cash flows which are represented by that expression. Then answer the question.

1. Evaluate:

$$a_{\overline{10}|.05}$$

2. Find the value as of time 3.



3. Find the Present Value:

$$10 a_{\overline{20}|.05} + v^{20} 10 a_{\overline{20}|.05}$$

4. Find the amount of the monthly payment:

$$\$42,000 = P \cdot a_{\overline{60}|.01}$$

Part B. For each description of cash flows, write out the algebraic expression which will solve the problem. Find the solution.

1. The present value of a 20 year mortgage with an annualized interest rate of 6%, compounded monthly is \$250,000. What is the monthly payment?

2. Your budget expects you will spend \$200 per month on car payments. The dealer in town advertises that you can get a car loan with no money down, and interest rates are 6% APR. (APR stands for Annualized Percentage Rate.) What is the highest amount you can pay for a car?

3. Five years ago you took out a twenty year \$200,000 mortgage to buy a condominium. Now you are selling the condo and buying a single family house. You have made all your mortgage payments on time. How much money do you still owe the bank to pay off the original mortgage, if the APR on the original mortgage was 4%?

4. You have to make a payment of \$5000 in exactly 8 years. Interest rates are 6%. You plan to set aside some money now to accumulate to be sufficient to make the payment in 8 years. You anticipate getting a one-time bonus payment of 1500 at the end of one year, which you will also put towards accumulating the funds to make the big payment in 8 years. How much do you need to set aside now?