If an amount of P dollars grows at an annual rate of r (usually given as a percent), then after t years, the total amount, A, will be

 $A = P(1+r)^{t}$ , where r has been converted to a decimal

Examples:

[a] Amir deposits \$500 into a savings account which earns 3.1% interest annually. What is the value of his account 4 years later?

A =

P =

r =

t =

[b] Blanca deposits \$700 into a certificate of deposit (CD) which earns 2.9% interest annually. How many years later will the value of the CD be \$1000?

A =

P =

r =

t =

[c] Carla buys a bond which earns 3.4% interest annually. She wants the bond to have a value of \$900 five years later. What is the value of the bond now?

A =

P =

r =

t =

[d] Dinh deposits \$5000 into a speculative investment, and 6 years later, the investment is worth \$8000. What is the annual growth rate of the investment?

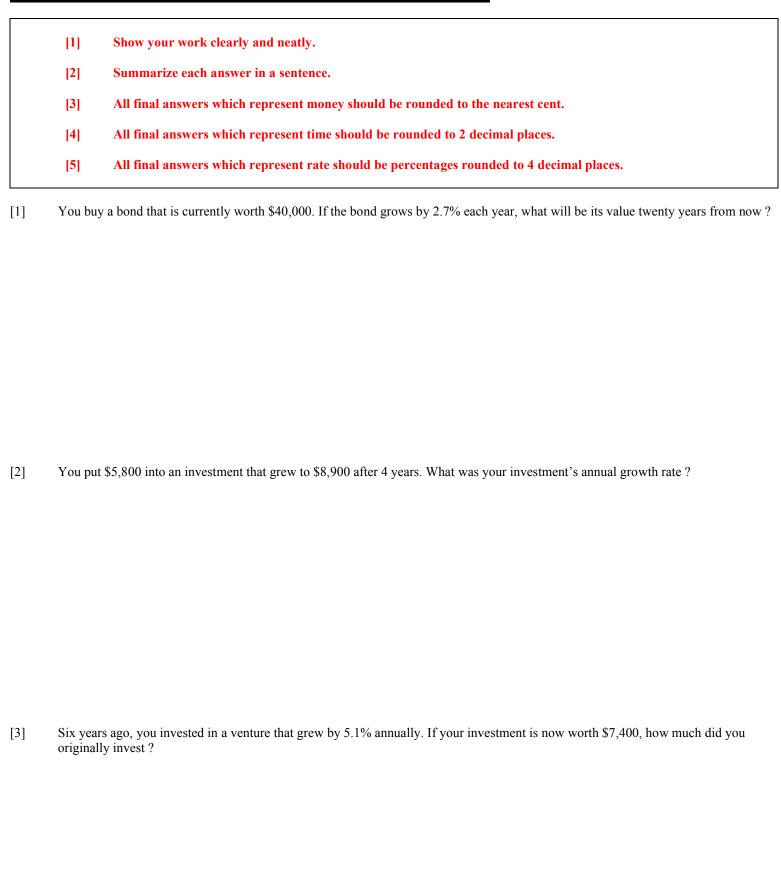
A =

P =

r =

t =

## **HOMEWORK (DUE IN CLASS ON MON NOV 28)**



[4]	You bought \$11,300 of a stock that is now worth \$17,000. If the stock's value increased 11.4% each year, how long ago did you buy the stock?
[5]	Your gold jewelry tripled in value in 4 years. How much did its value increase each year?
[6]	Jamie and Terry just bought their first house together. They expect to do a \$24,000 remodel 7 years from now. How much should they deposit into an investment now to cover the cost of the future remodel, if the annual growth rate of the investment is 9.3%?
[7]	When Lee and Taylor got married in June 2008, Lee's mother gave them a \$5,700 painting as a wedding present. As they celebrate their anniversary in June 2011, the painting is now worth \$8,900. What was the annual growth rate of the painting?

[8]	Morgan and Reese just deposited \$32,000 into an investment which grows 7.6% each year. They plan to quit their current jobs and open their own business when the investment reaches \$51,000. When will they be opening their new business?
[9]	When she graduated from high school, Bailey charged \$9,000 to her credit card to cover a lavish party, then didn't bother to look at or pay her bill. The interest, fees and fines caused her credit card balance to grow by 29% each year. If Bailey graduated 5 years ago, what is the current balance on her credit card?
[10]	When Dana and Chris got married at the age of 27, Chris gave Dana an antique watch, which grew in value by 4.3% each year. By the time their son entered college, the watch had doubled in value. How old were they when their son entered college?
I	n addition, do the related problems on the Midterm 3 review packet
	make sure you are prepared for the finance problems on Midterm 3