

	Interest	Future Value	Present Value
Ordinary Annuity		$S = R \left(\frac{(1+i)^n - 1}{i} \right)$	$P = R \left(\frac{1 - (1+i)^{-n}}{i} \right)$

- Ron is saving for a computer. At the end of each month he puts \$60 into a savings account that pays 8% compounded monthly. How much is in the account after 3 years?
- Raul, a 25 year old professional, puts \$750 into an account at the end of every quarter. The account pays 8% interest compounded quarterly.
 - If he does this until he turns 60, how much money will be in the account? (this is the future value of an ordinary annuity)
 - If he makes no other deposits and no withdrawals, how much will be in the account when he is 65?
 - Think about the amount of money that Raul would have at age 60. If this were a regular account, and he were to make a one-time deposit today, how much money would he have to deposit today to have the same amount of money as in (a) when he turns 60?
- Find the future value of the annuity where \$1288 is deposited at the end of each year for 14 years, where the money earns 8% compounded annually.
- Find the future value of the annuity where \$233 is deposited at the end of each month for 4 years and the money earns 12% compounded monthly.
- Each year a firm must set aside enough funds to provide employee retirement benefits of \$52,000 in 20 years. If the firm can invest money at 7.5% compounded monthly, what amount must be invested at the end of each month for this purpose?
- A student borrows \$35,000 at 3.43% compounded monthly.
 - If the loan is paid over 10 years with equal payments, find the amount of each payment.
 - How much of the first payment is interest?
 - How much of the first payment goes to the principle?
 - How much is owed on the loan after the first payment?
- Find the amount of the payment necessary to amortize a loan of \$32,000 at 9.4% compounded quarterly to be repaid in 10 quarterly payments.
- Find the monthly house payment for a mortgage of \$56,890 at 10.74% for 25 years.

9. Find the present value of the ordinary annuity with payments of \$10,000 semi-annually for 15 years at 10% compounded semi-annually.
10. Find the present value of the ordinary annuity where payments of \$850 are made annually for 4 years at 5% compounded annually.
11. Find the present value of the ordinary annuity where payments of \$4210 are made semiannually for 8 years at 8.6% compounded semiannually.