
Connections

The Chapter Problem

This *Chapter Problem* examines typical financial planning decisions that people must make concerning investments, repayment of loans, and retirement. Students are given financial information about a client and are asked to develop a financial plan that will assist the client make appropriate decisions concerning his investments. They must make decisions and calculations about setting up an education fund, paying down a car loan, renewing a mortgage, and establishing a retirement nest-egg.

Students use this information to generate the future balances of a savings plan and the repayment schedule for a loan using spreadsheets. By determining that the accumulated value of each deposit made represents the terms of a geometric series, students then calculate future balances. The given information is also used to determine which of two investment options the client should pursue (a simple and a general annuity). Students are also asked to use technology such as the TVM Solver of the TI-83 Plus calculator and spreadsheets to help check and solve problems related to the given client information.

This problem can be used on an ongoing basis as the chapter develops. Alternatively, the problem could be solved as an assignment after the entire unit has been taught. A blackline master listing all of the questions is provided at the end of the chapter. The answers / solutions to these questions are also provided.

Challenge 1

This problem gives students the opportunity to research common terminology used by financial institutions in dealing with mortgages. It also encourages them to investigate the contractual terms, obligations and conditions often used in mortgages. Students are encouraged to visit financial institutions or make use of the internet in answering the challenge. This problem can be used to assess their communication of their findings.

Challenge 2

This problem introduces students to the concept of a perpetuity. Students must realize that the regular payment paid out by the annuity must be less than or equivalent to the interest earned by the investment to maintain the perpetuity. Some students should be able to generalize that in an annuity, the payment is equivalent to the interest earned each period. Encourage students to use technology to investigate the problem before proceeding to an algebraic solution.

Web Challenge

You will find support for this Internet activity at the teachers' Web site. www.math.nelson.com.

This web challenge enables students to use the most current interactive data to investigate how one qualifies for a mortgage and to find current mortgage rates. Based on the given information students use internet MLS listings to select a home. Students then use technology to produce an amortization schedule for their mortgage and report on their findings and investigations.

All three Challenges can be used as rich learning tasks or for formative / summative assessment purposes. Refer to the front matter of this *Teacher Resource* for more detailed instructions.