



**Part Two:** *Not So Quick and Easy...*

1. [GH 3.4.23] A woman pays \$130 at each quarter's end into an account earning 5.4% interest compounded quarterly. After 10 years of deposits, she changes the amount of the deposits to \$200 per quarter. If the money continues to earn interest at the same rate, how much will be in the account 30 years after it was opened?

2. [GH 3.4.26] Although it is not possible to algebraically solve exactly for the interest rate  $r$  in the systematic savings plan formula,  $r$  can be estimated by using a calculator or computer that will perform such estimates or by making a series of guesses for  $r$ . Suppose deposits of \$230 are made at the end of each month into an account earning interest compounded monthly. After 6 years, the account is worth \$20,423. Use some method to estimate the annual interest rate  $r$  to two decimal places.

3. [GH 3.5.49 (adapted)] An amortized loan may have interest compounded more often or less often than payments are made. For instance, monthly payments may be made on a loan for which interest is compounded quarterly; or quarterly payments may be made on a loan for which interest is compounded monthly.

Find the payment on a loan of \$5000 at 8% interest compounded quarterly with payments made at the end of each month for 4 years.

Find the payment on a loan of \$5000 at 8% interest compounded monthly with payments made at the end of each quarter for 4 years.