

## The Bank Account Problem 1

At the beginning of the year, you deposit \$5,000 into a savings account. At the end of each month, the bank pays interest at a rate of 0.5% (rate quoted as a monthly rate).

Develop a mathematical model that describes the value of the bank account.

How much money is in the account at the end of September?

## The Bank Account Problem 2

At the beginning of the year, you deposit \$5,000 into a savings account. At the end of each month, the bank pays interest at a rate of 0.5% (rate quoted as a monthly rate). In addition, you deposit another \$200 into the account at the end of each month.

Develop a mathematical model that describes the value of the bank account.

How much money is in the account at the end of September?

## Which Car to Buy?

You wish to buy a car, and narrow your choices to a Saturn, Cavalier, and Hyundai. Each company offers you its best deal:

- Saturn: \$13,990, \$1,000 downpayment, and 3.5% interest for up to 60 months.
- Cavalier: \$13,550, \$1,500 downpayment, and 4.5% interest for up to 60 months.
- Hyundai: \$12,400, \$500 downpayment, and 6.5% interest for up to 48 months.

In each case, the interest rates quoted are annual interest rates.

You can afford up to a \$1,500 downpayment, plus \$475 per month on a car payment. Use a mathematical model to determine which car to buy.