

4.4 – Annuities: Notes and Examples

1. Mike invests \$250 a month into his bank account, which earns 8%/a compounded monthly. If Mike does this for 16 years, how much will he have in his bank account and how much interest did he earn?

N	I%	PV	PMT	FV	P/Y	C/Y

2. Sophia is about to start high school and she wants \$20,000 in her bank account when she graduates. If she can earn 5% compounded quarterly, how much money does she need to put in her bank account every 3 months?

N	I%	PV	PMT	FV	P/Y	C/Y

3. Chidi is done University with a reasonable debt of \$35,000. His interest rate with OSAP is prime plus 1%, compounded monthly. How much does he need to pay every month if we want this paid off in 5 years?

N	I%	PV	PMT	FV	P/Y	C/Y

4. Eleanor wants to buy a car. She can afford to pay \$200 a month for 4 years. She figures that she will get an interest rate no higher than 4%/a compounded monthly. What car price should she be looking for?

N	I%	PV	PMT	FV	P/Y	C/Y

4.4 – Annuities: Homework Questions. Fill in the chart. Circle which box is the answer.

1. Calculate the future value for \$100 per month for 50 years at 3.6%/a compounded monthly

N	I%	PV	PMT	FV	P/Y	C/Y

2. Alexia invests \$650 every 6 months at 4.6%/a compounded semi-annually for 25 years. What is the future value of this annuity and how much interest did she earn?

N	I%	PV	PMT	FV	P/Y	C/Y

3. Matthew wants to invest money every month for 40 years. He would like to have \$1,000,000 at the end of 40 years. If he earns 3.6%/a compounded monthly, how much does he need to invest each month?

N	I%	PV	PMT	FV	P/Y	C/Y

4. Lorraine wants to invest \$250 every three months at 8%/a compounded quarterly. She would like to have at least \$6500 at the end of her investment. How long will Lorraine need to make regular payments?

N	I%	PV	PMT	FV	P/Y	C/Y

5. You want to buy the latest iPhone (or other favourite cellular device) using store credit. The device is \$650 and the store charges 15%/a compounded monthly. If you plan on paying it off in two years, what will your monthly payments be? How much interest did you pay over the 2 years?

N	I%	PV	PMT	FV	P/Y	C/Y

6. Walter buys a car by paying \$300 a month at a rate of 5%/a compounded monthly for three years. How much did Jim buy the car for and how much interest did he pay over the 3 years?

N	I%	PV	PMT	FV	P/Y	C/Y