Annuities: Future Value

For questions #1 – 4 use the formula from the lesson

1. Use the Future Value formula to find the final value of each of the following annuities:

    a) $1000 is invested at the end of every year for 5 years at 3.5%/a compounded annually.
    b) $250 is saved every month for 4 years at 1.8%/a compounded monthly.
    c) $1500 is invested every quarter for 3 years at 2.5%/a compounded quarterly.
    d) $50 is invested at the end of every week for one year (52 weeks) at 3%/a compounded weekly.

2. Calculate the interest earned in question 1d).

3. Text page 388 #6

4. Katie wants to retire in 20 years. At the end of every month she puts $500 into an RRSP that pays 3.25%/a compounded monthly.

    a) How much will she have saved in 20 years?

    b) Suppose that Katie decides she needs to have $500 000 saved for retirement. Everything else the same, what monthly payment amount is required to have $500 000 in 20 years?

For questions #5 - 7 use an online TVM Solver.

5. For two years, Connor deposits $250 at the end of every month into his savings account. The savings account pays interest at a rate of 2.5%/a compounded monthly.

a) What is the value of Connor's savings account at the end of 2 years?
b) How much interest did Connor earn during the 2 years?

6. Anastasia plans to go to college after working for one full year. She has a savings account that pays 1.85%/a compounded daily. How much money she should deposit, every day, into the savings account, in order to have $15 000 saved? (assume 365 days in this year)

7. Raia puts $200 into a savings account every month. The money collects interest at 2.1%/a compounded monthly. How much will she have in her savings account in 2.5 years?

ANSWERS

1. a) $5362.47 b) $12 432.90 c) $18 631.82 d) $2638.62

2. $38.62

3. **(check back of textbook)**

4. a) $168 712.34 b) $1481.81

5. a) $6145.97 b) $145.97

6. $40.72

7. $6154.77