**9.3 Saving Money – Overview**

**Definitions / Key Ideas**

**Diagram, schematic

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**Future value (FV, A)** – The value of your current investment at some future time (What we’ve been calculating with our compound interest formula).

Know:

Want to know:

Diagram, text

Description automatically generated

**Present value (PV)** – The amount you need to invest now in order to reach a desired future value amount.

Ex) I want to have $20,000 in 10 years. If I can get an 8% APR compounded semiannually, how large must a one-time investment right now be?

Know:

Want to know:

**Annuity** – Making repeated, regular payments into an account that earns (compounded) interest.

**Diagram

Description automatically generated**

Ex) I deposit $200 every month into a savings account earning 5% APR. How much money will be in the account after 15 years? How much will I contribute in total?

Know:

Want to know:

**Diagram, text

Description automatically generated with medium confidence**

Ex) I want to have $50,000 in 20 years. How much do I need to deposit every month into a savings account earning 7% APR?

Know:

Want to know:

**Examples**

**Example 1**: Calculate the amount Audrey needs to invest now in one lump sum in order to have $100,000 after 18 years with an APR of 7% compounded monthly. Round your answer to the nearest cent, if necessary.

**Example 2**: Drake starts an IRA (Individual Retirement Account) at the age of 22 to save for retirement. He deposits $400 each month. The IRA has an average annual interest rate of 7% compounded monthly. How much money will he have saved when he retires at the age of 65? Round your answer to the nearest cent, if necessary.

**Example 3**: Jacob deposits $203.77 each month into an annuity account for his child's college fund in order to accumulate a future value of $60,000 in 18 years. How much of the $60,000 will Jacob deposit into the account in total, and how much will be interest he has earned? Round your answers to the nearest cent, if necessary.

**Example 4**: Devon deposits a fixed amount monthly into an annuity account for his child's college fund. He wishes to accumulate a future value of $65,000 in 17 years. Assuming an APR of 3.6% compounded monthly, how much of the $65,000 will Devon deposit into the account in total, and how much will be interest he has earned? Round your answers to the nearest cent, if necessary.