Name: _____

MATH 108
Spring 2024
HW 6: Due 02/14

"Look. There's something you should know about me. I've been trying to hide it but, it's time I told someone the truth. I know it's gonna sound crazy but. . . here it goes. . . I'm awkward."

— Ryan Newman, Wilfred

Problem 1. (10pts) For an annuity with a period of 15 years, quarterly payments, and a 8.91% annual interest, compounded monthly, compute the following:

(a) $s_{\overline{\text{PM}}|i}$

(b) $a_{\overline{\text{PM}}|i}$

(c) $\ddot{s}_{\overline{\text{PM}}|i}$

(d) $\ddot{a}_{\overline{\text{PM}}|i}$

Problem 2. (10pts) Colin DaCoupe is saving his money to be able to afford to take his friends to Hell's Kitchen in Las Vegas. He deposits $54 at the end of every month into a savings account that earns 2.31% annual interest, compounded monthly.

(a) How much will he have saved after 16 months?

(b) What should have Colin deposited each month if he had wanted to save at least $1,000 by the end of the 16 months?

Problem 3. (10pts) Sue Flay's parents saved money from their bistro to set up a small trust fund for when Sue turned 18. When Sue finally reached that milestone, the account had $62,000. The money was transferred into an account that earns 2.84% annual interest, compounded monthly. Sue wants to supplement her income using her trust fund. She plans on taking out equal amounts at the start of each month, every three months. Sue wants the trust fund to last 15 years.

(a) What is the amount that Sue should withdraw?

(b) If Sue instead withdraws the money at the end of each month, what is the amount she should withdraw?

Problem 4. (10pts) Lon Moore is saving for a new riding lawn mower that comes complete with DVD player, Bluetooth, and a beer cozy. He places $140 at the start of each month into an account that earns 1.08% annual interest, compounded monthly.

(a) How much will Lon have saved after 2 years?

(b) If he had wanted to save $5,600 at the end of the 2 years, how much should he have been depositing each month?