

## **MATH 373**

### **Quiz 3**

**Fall 2018**

October 18, 2018

1. Ram invests 5000 at the beginning of each year into Fund A for 25 years. Fund A earns an annual effective interest rate of 10%. Each year, Ram removes the interest earned from Fund A and deposits it into Fund B which earns an annual interest rate of 8%.

Calculate the total amount (in both Funds) that Ram will have after 25 years.

2. Jacque borrows 100,000 and is repaying it with annual payments of 9000 plus a balloon payment. The annual effective interest rate on the loan is 5%.

Calculate the balloon payment.

3. Xue is receiving a scholarship from Purdue that pays monthly payments at the beginning of each month for 48 months. The first payment is 1000. The second payment is  $(1000)(1.01)$ . The third payment is  $(1000)(1.01)^2$ . The payments continue in the same pattern with each payment being 1.01 times the prior payment.

Using an interest rate of 6% compounded monthly, calculate the present value of Xue's scholarship.