Fall 2016 471 - Exercise 1A

Not Due. For your practice purpose only.

1. John invested $10000 in stock of company X, and sold it for $10200 1 month later. What is the equivalent annual effective rate?

2. Susan borrowed $3000 and had to pay back $3500 as one payment in 3 years. What is the equivalent annual effective interest rate that they charged her?

3. If you deposit more than $10,000, ABC bank gives annual effective interest rate of 3% in the first year, 2% in the second year, and 4% in the third year. What is the equivalent average effective annual interest rate?

4. Convert 6 month interest rate of 4% to effectie annual rate.

5. Convert 5% quarterly interest rate to effectie annual rate.

6. Convert 1 month interest rate of 1 % to effectie annual rate.

7. What is the future value of $300 in 10 years, when effective annual interest rate is 10%?

8. What is the present value of $600 in 8 years, when effective annual interest rate is 6%?

9. Alex is about to borrow $4000. One-time repayment is due in 60 days. For effective annual rate of 7%, calculate his repayment amount. Use simple interest.

10. Jane needs $3000 in 3 years and another $5000 in 4 years from today. How much does she need to deposit today? Use effective annual interest rate of 7%.

11. What is the effective annual interest rate for nominal annual interest rate of 7% compounded semi-annually?

12. What is the effective annual interest rate for nominal annual interest rate of 7% compounded monthly?

13. Find the rate of interest convertible quarterly that is equivalent to a nominal annual rate of interest of 6% convertible semiannually.

14. Convert effective interest rate of 6% to nominal annual rate of interest of convertible quarterly.

15. A bank account lists (nominal) interest rate as 10.00%, but says effective rate is 10.47%. How often are they compounding?

16. If nominal interest of 9% was conpounded continuously, what is the effective annual interest rate?

17. In order to get effective interest rate of 12%, what nominal interst rate must be compounded continuously(i.e. Force of Interest for compounding interest)?

18. What is the future value of \$300 in 10 years, when annual interest rate is 10% compounded semiannually?

19. What is the future value of \$1000 in 4 years, when annual interest rate is 8% compounded quarterly?

20. What is the present value of \$600 in 8 years, when annual interest rate is 6% compounded monthly?