## Quick Problem Set \#1

All rates are Effective Annual Rate (EAR) unless otherwise noted. Express all answers as an EAR

| $1 / 2$ year rate: | $2.5 \%$ | 4 year rate: | $5.25 \%$ |
| :--- | :--- | :--- | :--- |
| 1 year rate: | $3 \%$ | 4.25 year rate: | $5.50 \%$ |
| 1.5 year rate: | $3.5 \%$ | 4.5 year rate: | $5.6 \%$ |
| 2 year rate: | $4 \%$ | 4.75 year rate: | $5.75 \%$ |
| 2.5 year rate: | $4.25 \%$ | 5 year rate: | $6 \%$ |
| 3 year rate: | $4.5 \%$ | 7 year rate: | $7 \%$ |
| 3.25 year rate: | $4.75 \%$ | 7.5 year rate: | $7.5 \%$ |
| 3.5 year rate: | $4.85 \%$ | 8 year rate: | $8 \%$ |
| 3.75 year rate: | $5.00 \%$ | 10 year rate: | $10 \%$ |

1. What is the one year forward rate between years 1 and 2 ?
2. What is the one year forward rate between years 2 and 3 ?
3. What is the one year forward rate between $1 / 2$ year and 1.5 years?
4. What is the six month forward rate (expressed as an EAR) from $1 / 2$ year to 1 year from now?
5. What is the three year forward rate starting two years from now?
6. What is the one year forward rate starting three years and three months from now?
7. What is the six month forward rate starting three years and three months from now?
8. Under the unbiased expectations hypothesis, what do you expect the six month interest rate to be 3.75 years from now?
9. What is the two year forward rate starting eight years from now?
10. What is the nine year forward rate starting one year from now?
A. What is the EAR for $10 \%$ compounded semi-annually?
B. What is the EAR for $10 \%$ compounded quarterly?
C. You are going to get $\$ 100$ in three months. Right now, your credit card is charging $12 \%$ compounded monthly. Assuming that is the correct rate, what is:
a. The EAR on your credit card?
b. The value today of that $\$ 100$ ?
