APR – EAR Transformation

**Case I**: APR to ER

ER-1

m = How many times are we compounding in the quoted period?

f = What is my period of interest and how many of those periods of interest are there in one quoted period?

*Remember that this formula can be applied to any kind of transformation as long as it is from APR to EAR.*

**Examples:**

1. If the monthly compounded APR is 15%,
2. Calculate the effective quarter rate
3. Calculate the daily effective rate
4. Calculate the 3-year effective rate
5. Assume you have an APR of 16% which is compounded quarterly
6. Calculate the daily effective rate
7. Calculate the monthly effective rate
8. Calculate the EAR.

**Case II**: EAR to APR



m = number of periods in the APR

*Remember that using the logic of the construction of the rates may always be the easier way to solve such problems.*

**Example:** Assume that the EAR on your mortgage agreement is 16%.

1. You’d like to make monthly payments. Calculate the effective monthly rate
2. What would be the APR in this case?
3. Instead, you would like to make semi-annual payments. Calculate the effective semi-annual rate.
4. What would be the APR in this case?

3. Calculate the ***effective annual rates*** for the following

a) 24% compounded daily

b) 24% compounded quarterly

c) 24% compounded every 4 months

d) 24% compounded semi-annually

e) 24% compounded continuously