Interest Rate/Discount Rate Practice Sheet

Please complete the table. \* Remember the interest rate and the time period to which it is applied must have consistent units be they daily, semiannually, annually, biennually, etc.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| (1)Rate Description | (2)Rate | (3)Date or Period Over Which Rate is Applied | (4) &Period of Effective Rate | (5)&&m  | (6)Periodic Rate = j = (2) / m | (7) &&&Time Periods (t)  # and length | (8)Accumulated Value of $1= (1+j)t | (9)Present Value of $1 = 1 / (1+j)t | (10)Number of Time Periods in a Year = u | (11)Equivalent Annual Effective Rate= (1+j)u -1 |
| Annual Effective Interest Rate | .0525 | 3 Years | 1 Year | 1 | .0525 | 3 annual  | 1.165913453 | .857696596 | 1 | .0525 |
| Nominal Annual Interest Rate Compounded Quarterly | .0746 | 10 Semiannual | 1 Quarter | 4 | .01865 | 20 Quarters  | 1.447104 | .691035 | 4 | .076713 |
| Monthly Effective Interest Rate | .005 | 1-1/4 years | 1 Month | 1 | .005 | 15 Months | 1.0776827 | .927917 | 12 | .061678 |
| Nominal Annual Interest Rate Compounded Daily | .0365 | 40 days | 1 Day | 365 | .0001 | 40 Days | 1.0040078 | .996008 | 365 | .037172 |
| Daily Effective Interest Rate | .0001 | 40 days | 1Day | 1 | .0001 | 40 Days | 1.0040078 | .996008 | 365 | .037172 |
| Nominal Semiannual Interest Rate Compounded Monthly | .0817 | 10 Quarters | 1 Month | 6 | .013616667 | 30 Months | 1.500418 | .666481 | 12 | .176210 |
| Nominal Annual Interest Rate Compounded Every 2 Years | .10 | 4 years | 2 Years | 1/2 | .20 | 2 2-Year Periods | 1.44 | .694444 | 1/2 | .095445 |
|  6-month interest rate compounded every 6 months | .02 | 10 years | 6 Months | 1 | .02 | 20 Semiannuals | 1.485947 | .672971 | 2 | .0404 |

& Period of Effective Rate will generally be the compounding period if a Nominal Rate and if an Effective Rate the time period of the effective rate.

&& m = the number of times the "period of effective rate" in column 4 occurs in the period of the stated rate. If the rate is compounded monthly, the period of effective rate is monthly. If the stated rate is then "Nominal Semiannual Interest Rate", then there are 6 monthlys in a semiannual, so m=6.

&&& How many time periods of column 4 are there in the time period in column 3? If column 4 is "quarterly" and column 3 is "10 semiannual periods", then there are 2 quarterly periods in a semiannual, and therefore 2\*10 = 20 quarters in 10 semiannual periods.