

CTC/MTC 475 Review

1. Single Sums
 - a. Find F given P (move cash flow to the future)
 - b. Find P given F (move cash flow back in time)
2. Uniform Series (A is a uniform cash flow of n periods)
 - a. P/A (P occurs 1 time period before the first A cash flow)
 - b. F/A (F occurs at the same time as the last A cash flow)
3. Gradient Series (cash flows differ by a constant amount)
 - a. Pure gradient
 - b. Uniform + Gradient
 - c. Uniform - Gradient
4. Geometry Series (cash flows differ by a constant percentage j)
 - a. $i=j$
 - b. i does not equal j
5. Rates (all three must match: 5% per year compounded yearly; time period years)
6. Methods for Determining Economic Feasibility
 - a. Present Worth (PW)-Move all cash flows to period 0; $PW>0$
 - b. Future Worth (FW)-Move all cash flows to the future; $FW>0$
 - c. Annual Worth (AW)-Find A/P or find A/F; $AW>0$
 - d. IRR-Set PW or $AW=0$ and solve for IRR; $IRR>MARR$
 - e. ERR-Set FW of negative cash flows @ ERR equal to FW of positive cash flows @ MARR (or e that is different than MARR); solve for ERR; $ERR>MARR$
 - f. SIR or B/C-PW of positive cash flows/PW of negative cash flows ($B/C>1$)
 - g. PBP (non-discounted or discounted)-how many time period to get your investment back (not equivalent to a-f)
 - h. Capitalized Worth (often $AW/MARR$ but may not be equivalent to a-f)
7. Comparing Alternatives
 - a. Ranking (works for PW, AW, FW)
 - b. Incremental (must use for IRR, ERR or B/C)
8. Replacement Problems (defender vs challenger; use outsider viewpoint)
9. Cost Estimating/Accounting
 - a. Cost Estimating (Indices: time, place size); Units (per sq ft); Factor (complete breakdown)
 - b. Balance Sheet; Income Sheet
10. Breakeven
 - a. Present Economy (time value of money does not matter; determine which machine should be used)
 - b. Linear/Nonlinear Breakeven (equations for costs, revenue and net profit)
11. Depreciation
 - a. Methods (SL, DB, SOYD, MACRS)
 - b. Book value; Depreciation
12. Convert a Before-Tax Cash Flow (BTCF) to an After-Tax Cash Flow (ATCF)
13. Methods to help evaluate Uncertainty
 - a. Breakeven
 - b. OMP (optimistic, most probable, pessimistic)
 - c. Spider-Graph (evaluate range of values)
 - d. Monte-Carlo simulations (define probabilities; make many runs)