IE 342 17-18 Spring Semester

Study Set 5

Please do not submit your answers as they will not be graded!!

1) Consider the following investment projects: Assume that MARR=12% in the following questions:

	Net Cash Flow		
n	Project 1	Project 2	Project 3
0	-\$1,600	-\$5,000	-\$1,000
1	10,000	10,000	4,000
2	10,000	30,000	-4,000
3		-40,000	

a) Identify i*('s) the for each investment. If the project has more than one i*, identify all of them.
b) Which project(s) is (are) a mixed investment?
c) Compute the IRR for each project.
d) Determine the acceptability of each project

2) Consider four investments with the following sequences of cash flows:

	Net Cash Flow			
n	Project 1	Project 2	Project 3	Project 4
0	-\$18,000	-\$30,000	-\$34,578	-\$56,500
1	30,000	32,000	-18,000	2,500
2	20,000	32,000	-18,000	6,459
3	10,000	-22,000	-18,000	-78,345

a) Identify all the simple investments.
b) Identify all the nonsimple investments.
c) Compute i* for each investment.
d) Which project has no rate of return?

3) Consider the following two mutually exclusive investment projects:

	Net Cash Flow	
n	Project 1	Project 2
0	-\$300	-\$800
1	0	1,150
2	690	40
i*	51.66%	46.31%

Assume that MARR=15% According to the IRR criterion, which project would be selected?

4) Consider the following two mutually exclusive investment alternatives:

	Net Cash Flow	
n	**Project A**	**Project B**
0	-$15,000	-$20,000
1	7,500	8,000
2	7,500	15,000
3	7,500	5,000
IRR	23.50%	20.00%

a) Determine the IRR on the incremental investment.
b) If the firm's MARR is 10%, which alternative is the better choice?

5) The double-declining-balance method is to be used for an asset with a cost of $68,000, an estimated salvage value of $12,000, and an estimated useful life of six years.

a) What is the depreciation for the first three fiscal years, assuming that the asset was placed in service at the beginning of the year?
b) If switching to the straight-line method is allowed, when is the optimal time to switch?

6) Compute the DDB depreciation schedule for the following asset:

Cost of the asset (I)	Useful Life (N)	Salvage Value (S)
$46,000	5 years	$10,000

a) What is the value of α?
b) What is the amount of depreciation for the second full year of use of the asset?
c) What is the book value of the asset at the end of the fourth year?

7) A carpet company is reviewing ways of cutting the cost of stocking raw materials. Two new stockless systems are being considered, to decrease the company's holding and handling costs. Relevant financial data for each system as follows (dollar values are in millions):

	Current Practice	Just-in-Time System	Stockless Supply System
Start-up cost	$0.0	$2.5	$5.0
Annual stock holding cost	$3.0	$1.4	$0.2
Annual operating cost	$2	$2	$1
System life	8 years	8 years	8 years

If the company's MARR is 10%, which system is more economical?