IE 342 2019-2020 Fall
Study Set 4
Please do not submit your answers as they will not be graded!!
(Solutions will not be provided)

1)

n	cash flow
0	-\$142,000
1	\$42,000
2	\$37,000
3	\$130,000

a) Find the IRR for this investment.
b) On the basis of the IRR criterion, should the project be accepted at MARR = 15%?

Answer:
a) IRR=17.74%
b) The project should be accepted.

2) If the MARR is 10% choose the best among the four alternatives based on IRR.

n	C1	C2	C3	C4
0	-\$5,000.00	-\$4,000.00	-\$2,500.00	-\$6000
1	\$2,500.00	\$2,500.00	\$750.00	\$10000
2	\$3,750.00	\$1,500.00	\$1,000.00	\$30000
3	\$1,500.00	\$1,750.00	\$1,250.00	-\$40000

Answer: C1 is the best option.

3) MARR is 10%.

n	P1	P2	P2-P1
0	-$5,000.00	-$10,000.00	
1	$2,500.00	$6,500.00	
2	$3,750.00	$5,500.00	
3	$1,500.00	$1,750.00	
IRR	27%	22%	

a) Compute the i* of P2-P1
b) Which project would you choose using an IRR analysis
Answer: The project 1 should be chosen.

4) Lenske Corporation wants to build a spare parts storage facility in Arizona. A plant engineer has identified four different location options. The initial cost and the annual net cash flow estimates are given in the following table. If the MARR is 10%, use incremental ROR analysis to select the economically best location.

	A	**B**	**C**	**D**
Initial cost, $	-200,000	-275,000	-190,000	-350,000
Annual cash flow, $ per year	22,000	35,000	19,500	42,000
Life, years	30	30	30	30

Answer: B

5) MME company manufactures air conditioners. The net cash flow associated with one phase of the operation is shown below.
   a. How many possible rate of return values are there for this cash flow series?
   b. Find all the rate of return values between 0% and 100%.

Year	**Net Cash Flow, $**
0	-30,000
1	20,000
2	15,000
3	-2,000

Answer: a. 2 b. 7.43% per year

6) 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?
Answer : Project B

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

	Current Price	Just-in-Time System	Stockless Supply System
Start-up cost	$0	$2.5	$5
Annual Stock holding cost	$3	$1.4	$0.2
Annual Operating cost	$2	$1.5	$1.2
System Life	8 years	8 years	8 years

The system life of eight years represents the period that the contract with the medical suppliers is in force. If the hospital's MARR is 10%, which system is more economical?
Answer: Stockless Supply System