**ICA 5.1\_ Chapter 5**

1. **Please watch the following video and REPLICATE this in excel.** <https://www.youtube.com/watch?v=UVp3RXzgLmc>
2. **Using spread sheets, answer the following questions.**

XYZ Inc. is considering two projects A and B. The cash flows of the projects are as follows:

|  |  |  |
| --- | --- | --- |
| **Year** | **Project A** | **Project B** |
| 0 | -$5,300 | -$2,900 |
| 1 | $2,000 | $1,100 |
| 2 | $2,800 | $1,800 |
| 3 | $1,600 | $1,200 |

Assume that the discount rate is 9.0%

A. Find NPV of both projects A and B. Based on NPV, which project will you choose if they are ***mutually exclusive*** (if you choose one, you cannot choose other)? What if the projects are **independent** (if both are good projects, you can choose both)

B. What are Payback Period and Discounted Payback Period for each of the projects A and B?

C. Find Internal Rate of Return (IRR) for both projects A and B? Assume the projects are mutually exclusive, perform the incremental required rate of return analysis, and decide which project(s) you will choose based on IRR.

D. Find Profitability Index of each of the projects A and B? Which project(s) will you choose based on PI (assume projects are independent)?

1. Bivion Air Cargo is considering an investment of $10 million to purchase facilities with the life expectancy of 10 years, and an annual operating cost of $400,000 in year 1. The operating cost is expected to increase by $50,000 every year after the first year through the life of the project. Bivion Air Cargo anticipates a stream of $2.5 million in revenue per year from the project for 10 years. Using 12% opportunity cost of capital, decide whether the project is economically justified. Please show work for at least two investment criteria.

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| 1. Duo Corporation is evaluating a project with the following cash flows: |

| **Year** | **Cash Flow** | |
| --- | --- | --- |
| **0** | −$ 53,000 |  |
| **1** | 16,700 |  |
| **2** | 21,900 |  |
| **3** | 27,300 |  |
| **4** | 20,400 |  |
| **5** | − 8,600 |  |

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|  |
| The company uses a discount rate of 11 percent on all of its projects. |
|  |
| Calculate the MIRR of the project following the approach discussed in the lecture slides. |

**Thank you**