**Activity 8.3**

**Name: Team:**

1. ***NPV profiles of two mutually exclusive projects.***

Recall the two projects being proposed to billionaire Liam V. He has two potential projects for the coming year, Matias’ project and Milli’s project. Since Matias’ project was too short, his friend Liam L. proposes another project. The two projects are mutually exclusive. The cash flows are listed below in table 8.3 below.

**(a) Draw the NPV profile**: select different discount rates from 0% using the increments of 1% through 20% on the x-axis. Plot the NPV at each hurdle against the rate itself for both the projects. Please label the axes.

(b) **IRR**: Also find the IRR of the projects for the x-axis intercept.

(c) **Crossover rate**: Please determine the exact cross-over rate of the two projects by taking a difference of the two cash flows.

(d) If the appropriate hurdle rate is 10% for both projects which project, does Liam V. choose?

(e) **Profitability Index**: Find the PI at this rate for each project.

|  |  |  |
| --- | --- | --- |
| Cash Flow | Milli’s project | Liam L.’s project |
| Year 0 | -290,000,000 | -240,000,000 |
| Year 1 |  50,000,000 | 65,000,000 |
| Year 2 |  62,500,000  | 74,050,000 |
| Year 3 |  75,000,000  | 50,000,000 |
| Year 4 |  87,500,000  | 50,000,000 |
| Year 5 |  100,000,000  | 50,000,000 |
| Year 6 |  65,000,000 | 50,000,000 |

**Table 8.3**