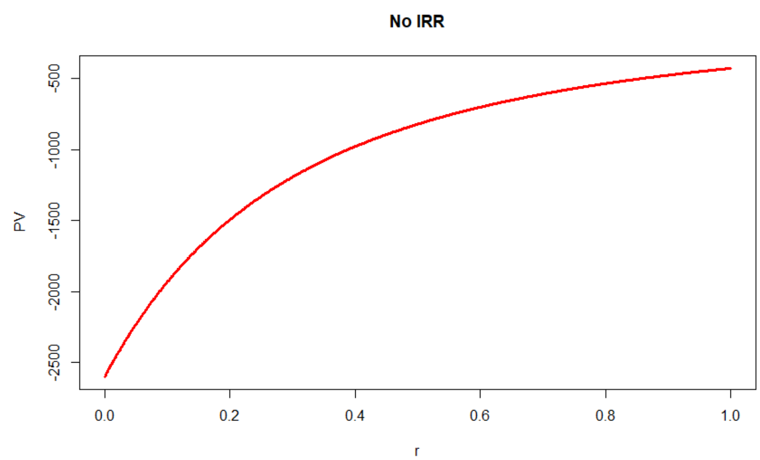
Problem #5 IRR

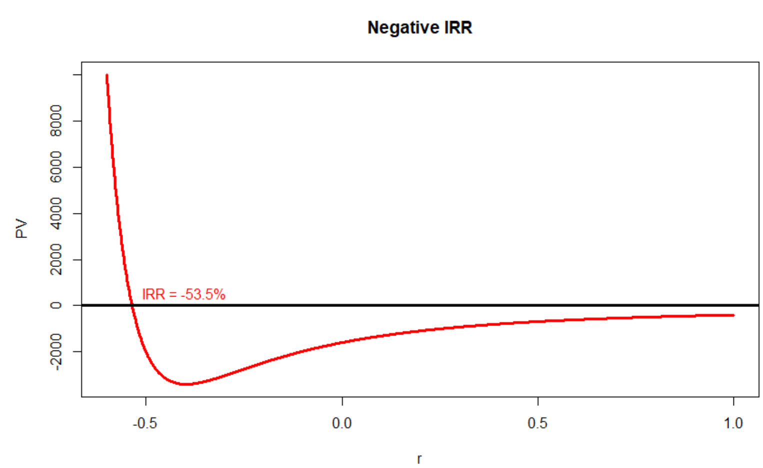
The internal rate of return (IRR) of a project is the discount rate in the PV calculation that makes the PV equal to zero.

No IRR Project

No IRR case occurs when the project continues to cost money without any profit (negative cash flow). For example, the cash flow is (-400, -300, -800, -600, -500) and PV is always negative and therefore there is no solution for IRR.



Sometimes, although there will be no solution in the positive range, negative root exists for IRR within the range of (-1, 0). For example, the project cash flow is (-400, -300, -800, -600, 500) and PV is zero at IRR=-53.5%. Negative IRR simply indicates that the project investment loses money at the calculated rate.



Multiple IRR Project

Multiple IRRs case occurs when the project experiences abnormal cash flow (multiple times of positive cash flow followed by negative cash flow), especially when there is a huge cash outflow at the end of the project. For example, the project cash flow is (-400, 350, 800, 580, -1450) and there are two IRRs (7.6% and 81.1%) for PV=0. Within this range of IRR, the PV of the project cash flow is positive.