t = 0.A $400 feasibility study would be conducted at t = 0

t = 1, $1,000 cost, 80% probability

t = 2, $10,000 cost, 60% probability

t = 3, $25,000 inflow, 50% probability, $10,000 inflow with 50% probability, 20% cost of capital is used. Net present value (NPV) of a time series of cash flows, both incoming and outgoing, is defined as the sum of the present values (PVs) of the individual cash flows of the same entity. In the case when all future cash flows are incoming (such as coupons and principal of a bond) and the only outflow of cash is the purchase price, the NPV is simply the PV of future cash flows minus the purchase price (which is its own PV). NPV is a central tool in discounted cash flow (DCF) analysis and is a standard method for using the time value of money to appraise long-term projects. Used for capital budgeting and widely used throughout economics, finance, and accounting, it measures the excess or shortfall of cash flows, in present value terms, above the cost of funds.

$$NPV(i, N) = \sum_{t=0}^{N} \frac{R_t}{(1+i)^t}$$

NPV = -400-1000/1.2-0.8*10000/1.2^2+0.8*0.6*(0.5*25000/1.2^3+0.5*10000/1.2^3)/2 = -4358.33