Q1. In each year, there is 50% chance of reaching a good economy, and 50% chance of reaching a bad economy. Project X and Project Y have the following cashflows in dollars, respectively, depending on how good the economy is. Discount rate is 10% per year.

<Project X>

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  | Good Economy |
|  |  |  |  | 2000 |
|  | |  | | --- | |  | | Good Economy |  |
|  |  | 1000 |  | Bad Economy |
|  |  |  | 500 |
| -500 |  |  |  |  |
|  |  |  |  | Good Economy |
|  | Bad Economy | 500 |
|  | -500 |  |  |
|  |  |  |  | Bad Economy |
|  |  |  | -1000 |
|  |  |  |  |  |
| Year 0 |  | Year 1 |  | Year 2 |

<Project Y>

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  | Good Economy |
|  |  |  |  | 4000 |
|  |  | Good Economy |  |
|  | 1500 |  | Bad Economy |
|  |  | 500 |
| -500 |  |  |  |  |
|  |  |  |  | Good Economy |
|  | Bad Economy | -500 |
|  | -1000 |  |  |
|  |  |  |  | Bad Economy |
|  |  |  | -2000 |
|  |  |  |  |  |
| Year 0 |  | Year 1 |  | Year 2 |

Q4. Suppose that you are a movie producer. You have two different movies to produce in mind: <CUHKSZ 1: Wonderful Longgang> and <CUHKSZ 2: Boring Longgang>. The production of each movie costs $4000, and some revenues from ticket sales will be generated in the following year of the movie production (Suppose there is neither additional cost nor tax associated with ticket sales; in other words, revenues themselves will represent incremental after-tax cashflows from the movie.) Because there is uncertainty about the popularity of the movies, the amount of revenues depends on the demand: with 30% chance, you will face high demand, in which case each movie will generate $9000 in the following year of the production and with 70% chance, you will face low demand, in which case each movie will generate $2000 in the following year of the production. The appropriate discount rate associated with the project is 10% per year.

