Answer on Question #50305 – Economics - Finance

You are considering the purchase of two different insurance annuities. Annuity A will pay you $16,000 at the beginning of each year for 8 years. Annuity B will pay you $12,000 at the end of each year for 12 years. Assuming your money is worth 7%, and each costs you $75,000 today, which would you prefer?

Solution

To choose which annuity is better we need to compare its NPV:

$$NPV = \sum_{t=1}^{T} \frac{C_t}{(1+r)^t} - C_o$$

where:

C_t = net cash inflow during the period

C_o= initial investment

r = discount rate, and

t = number of time periods

$$NPV_A = \sum_{t=0}^{7} \frac{16{,}000}{(1+7\%)^t} - 75{,}000 = 102{,}228 - 75{,}000 = 27{,}228$$

$$NPV_B = \sum_{t=1}^{12} \frac{12{,}000}{(1+7\%)^t} - 75{,}000 = 95{,}312 - 75{,}000 = 20{,}312$$

Answer

I would prefer Annuity A, because its NPV is bigger than Annuity B NPV.