Answer on Question #40015 – Economics - Economics of Enterprise

1.) P5,000 semiannually first five years, P8000 quarterly next five years,
P10,000 monthly thereafter.
start one semiannual after
fund earns 8% per year bimonthly = 1/3% bimonthly.
Total amount of scholarship for 10 years = 5000*10+8000*20 = 210,000
The sum on the account after 10.5 years should be enough to cover with earnings monthly payment of 10,000, so 1/3% = 5,000, so the total sum will be 5,000/0.00333 = 1,500,000.
The sum with earnings before paying the scholarship for first 10 years will be: 1,500,000 + 210,000 = 1,710,000
The initial amount of donation is 1,710,000/(1+0.00333)^240 = 769375.414.

2.) payments of P55,000, P85,000, interest rate is 12% compounded quarterly.
If capitalized equivalent is X, so the equation is
(X*1.03^2 - 55,000)*1.03^2 - 85,000 = X
X*1.03^4 - 55,000*1.03^2 - 85,000 = X
X = (85,000 + 58,349.5)/(1.03^4 - 1) = 1,142,146.91