1. A fully discrete 20 year term insurance policy to (70) has a death benefit of 50,000. The net premium is calculated using the equivalence principle.

You are given that mortality follows the Illustrative Life Table with interest at 6%.

Calculate the $V^n$. 
2. You are given:

   a. \( 1000A_{50} = 200 \)
   
   b. \( 1000A_{51} = 210 \)
   
   c. \( \nu = 0.92 \)

Let \( 1000 \cdot P^{\text{FPT}}_1 \) be the first year net premium using the Full Preliminary Term reserve method for a fully discrete whole life policy on (50) with a death 1000. Also let \( 1000 P^{\text{FPT}}_{x+1} \) be the net premium in years two and later using the Full Preliminary Term reserve method for a fully discrete whole life policy on (50) with a death 1000.

Calculate \( 1000 P^{\text{FPT}}_{x+1} - 1000 \cdot P^{\text{FPT}}_1 \).
1. A fully discrete whole life policy to (50) has a death benefit of 750,000. Gross premiums are paid annually for the life of the insured and are calculated using the equivalence principle.

You are given that mortality follows the Illustrative Life Table with interest at 6%.

The policy also has expenses of 50% of gross premiums the first year and 10% of gross premiums each year thereafter. Additionally, there is annual maintenance at the beginning of each year of 40.

Calculate the expense reserve at the end of the 5th year.
2. A fully discrete whole life policy to (60) has a death benefit of 50,000. The net benefit reserves are calculated using the Full Preliminary Term reserve method.

You are given that mortality follows the Illustrative Life Table with interest at 6%.

Calculate \( V^{FPT}_{12} \).