1. Do problems 7.1, 7.23, 7.29, 7.30, and 7.31 from the textbook.

2. (Sample Question #16) For a special fully discrete whole life insurance on (40):
   (i) The death benefit is 1000 for the first 20 years; 5000 for the next 5 years; 1000 thereafter.
   (ii) The annual benefit premium is $1000P_{40}$ for the first 20 years; $5000P_{40}$ for the next 5 years; $\pi$ thereafter.
   (iii) Mortality follows the Illustrative Life Table.
   (iv) $i = 0.06$
   Calculate $21V$, the benefit reserve at the end of year 21 for this insurance.

3. (Sample Question #62) A large machine in the ABC Paper Mill is 25 years old when ABC purchases a 5-year term insurance paying a benefit in the event the machine breaks down. Given:
   (i) Annual benefit premiums of 6643 are payable at the beginning of the year.
   (ii) A benefit of 500,000 is payable at the moment of breakdown.
   (iii) Once a benefit is paid, the insurance contract is terminated.
   (iv) Machine breakdowns follow De Moivres law with $l_x = 100 - x$.
   (v) $i = 0.06$
   Calculate the benefit reserve for this insurance at the end of the third year.

4. (Spring 2007, #3, SOA) For a fully discrete whole life insurance of 1000 on the select life [60]:
   (i) Ultimate mortality follows the Illustrative Life Table.
   (ii) The select period is 3 years.
   (iii) $i = 0.06$
   (iv) $1000.A_{[60]} = 359.00$
   Calculate $1000_5V_{[60]}$, the benefit reserve at the end of year 5 for this insurance.