Pstat 172B: Quiz 2 NAME:_____ *April 22, 2008*

Consider a special fully discrete whole life insurance issued to (40). The death benefit is \$1000 for the first 20 years; \$5000 for the next 5 years; \$1000 thereafter. The annual benefit premium is $\$1000P_{40}$ for the first 20 years; $\$5000P_{40}$ for the next 5 years; $\$\pi$ thereafter. Use the following extract from a life table and $i = 6\%$.

x	$\ddot{a}_x$	$1000A_x$	$1000{}_5E_x$	$1000{}_{20}E_x$
40	14.8166	161.32	735.29	274.14
60	11.1454	369.13	687.56	149.06
65	9.8969	439.80	656.23	97.60

1. (5 pts.) Calculate ${}_{20}V$, the benefit reserve at the end of year 20 for this insurance.

2. (5 pts.) At the end of year 20, the policy holder has the option to pay with the benefit premium $\$1000P_{40}$ after age 65 in return for reducing the death benefit to $\$B$ after age 65. Find B.