PGSS: Math Finance HW 3

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1. (a) It makes payments of \$25 at time $\frac{1}{2}$, \$50 at time 1, \$75 at time $\frac{3}{2}$, and \$100 at time 2.

   (b)

$$P_1 = \frac{25}{(1 + \frac{0.06}{12})^{24}} = \$22.18$$

$$P_2 = \frac{25}{(1 + \frac{0.06}{12})^{18}} = \$22.85$$

$$P_3 = \frac{25}{(1 + \frac{0.06}{12})^{12}} = \$23.55$$

$$P_4 = \frac{25}{(1 + \frac{0.06}{12})^{6}} = \$24.26$$

$$F_P = \frac{1000}{(1 + \frac{0.06}{12})^{24}} = \$887.19$$

$$\sum P + F_P = \$980.03$$

   (c) To reconstruct this portfolio using zero coupon bonds, you need one bond of \$25 maturing each quarter with the last one (after 2 years) being of value \$1025.