Q2 (4 Points):

If *$2000* is invested at an annual rate of 5.5% compounded continuously, and then find the compounded amount at the end of 5 years, and then find the compound interest.

$r = 5.5\% = 0.055$, $t = 5$, $P = \$2000$

$$S = P e^{rt}$$

$$= (2000)\, e^{(.055)(5)} = 2000\, e^{.275}$$

$$= \$2,633.06$$

(3)

Compound interest $= S - P$

$= 2,633.06 - 2000$

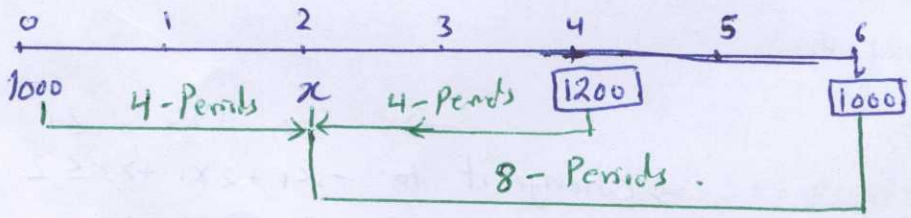
$= \$633.06$

(1)

Q3 (6 Points):

A debt of $1200 due in four years and $1000 due in six years is to be repaid by a payment of $1000 now and a second payment at the end of two years. How much the second payment should be if interest is 8% compounded semiannually?

Let x be the second payment , $r = \frac{.08}{2} = .04$



(2)

$$1000(1.04)^4 + x = 1200(1.04)^{-4} + 1000(1.04)^{-8}$$

$$\therefore x = 1200(1.04)^{-4} + 1000(1.04)^{-8} - 1000(1.04)^4$$

$$\approx \$586.60$$

(3) (1)