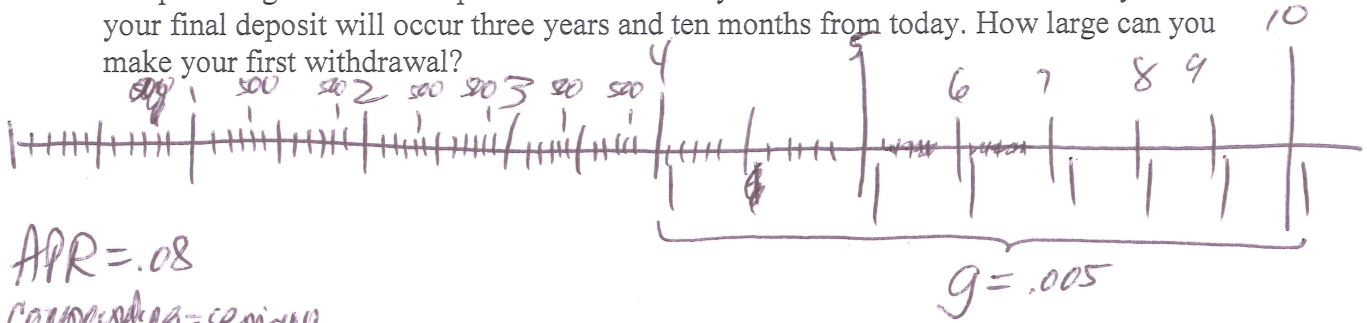


Assume that four years and one month from today you plan to make the first of annual withdrawals from an account. You plan for these withdrawals to continue through ten years and one month from today and for each withdrawal to be 0.5% larger than the previous withdrawal. You plan to fund these withdrawals by making a series of semiannual deposits of \$500 each into an account earning an APR of 8% with semiannual compounding. Your first deposit will occur one year and four months from today and your final deposit will occur three years and ten months from today. How large can you



APR = .08

compounding = semiann

$r(\frac{1}{2}) = \frac{.08}{2} = .04$  (15)

$r(1) = (1 + r(\frac{1}{2}))^2 - 1$  (12)

$FV_{7\text{ yrs}, 10.00} = \frac{500}{r(\frac{1}{2})} \left( (1 + r(\frac{1}{2}))^6 - 1 \right)$  (15)

$PV_{3\text{ yrs}, 1.00} = FV_{7\text{ yrs}, 10.00} \left( \frac{1}{1 + r(1)} \right)^{3\frac{3}{4}}$  (15)

$PV_{3\text{ yrs}, 1.00} = \left( \frac{C}{r(1) - .005} \right) \left( 1 - \left( \frac{1.005}{1 + r(1)} \right)^7 \right)$  (18)

⇒ set (1) & (2) equal + solve for C