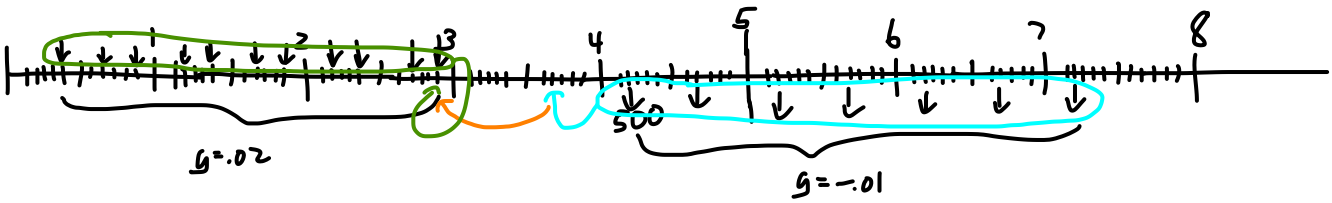
Quiz B: 7/~~13~~ 14/16 Name Key

Set up the equations (write down the equations and plug in all relevant numbers) needed to solve the following:

Assume that five months from today you make the first of a series of quarterly deposits into an account earning an APR of 6.5% with monthly compounding. Each deposit is 2% larger than the last one and your final deposit occurs two years and eleven months from today. Four years and two months from today, you make your first semiannual withdrawal from the account. The first withdrawal equals $500 and each subsequent withdrawal is 1% smaller than the previous one. Your final withdrawal will occur seven years and two months from today. How large do you need to make your first deposit so that you can make your planned withdrawals?

Note: If in any step you are solving for anything other than the left hand side of an equation, clearly state what you are solving for.



+5 ($r\left(\frac{1}{12}\right)=\frac{.065}{12}$ +1 +5 (11)

+5 ($r\left(\frac{1}{4}\right)=\left(1+r\left(\frac{1}{12}\right)\right)^{3}-1$ +5 (10)

$r\left(\frac{1}{2}\right)=\left(1+r\left(\frac{1}{12}\right)\right)^{6}-1$ +5 (5)

+5 ($V_{3y8m}=\left(\frac{500}{r\left(\frac{1}{2}\right)-(-.01)}\right)\left(1-\left(\frac{1-.01}{1+r\left(\frac{1}{2}\right)}\right)^{7}\right)$ +1 +4 +5 (15)

+5 ($V_{2y11m}=V_{3y8m}\left(\frac{1}{1+r\left(\frac{1}{12}\right)}\right)^{9}$ +5 (10)

set equal & solve for C +5 (5)

+5 ($V_{2y11m}=\left(\frac{C}{r\left(\frac{1}{4}\right)-.02}\right)\left(\left(1+r\left(\frac{1}{4}\right)\right)^{11}-(1.02)^{n}\right)$ +5 +4 (19)