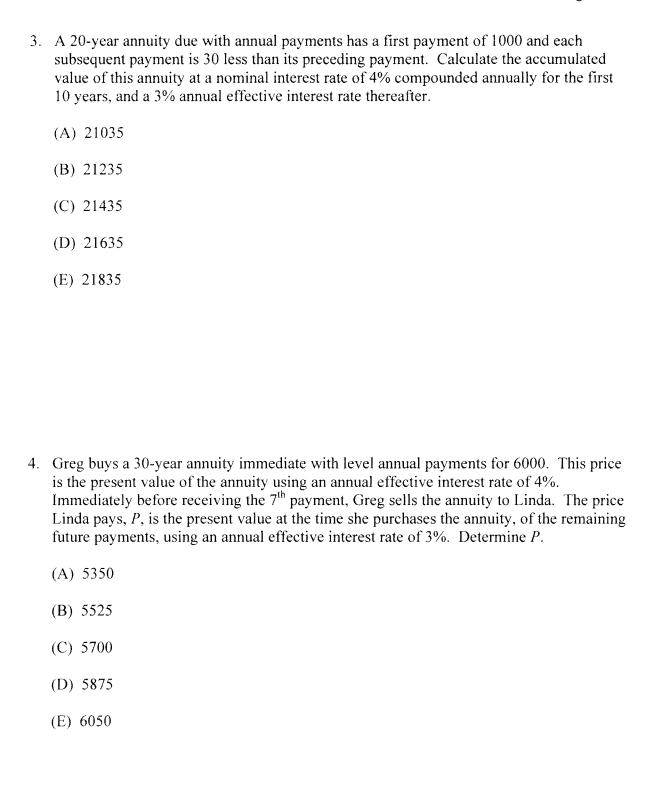
| | MAP 4170 Na | ne: |
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| | Test 2 | Date: June 18, 2015 |
| | Show sufficient work and clearly mark your ans | wers. Each problem is worth 10 points. |
| 1. | Perpetuity A is perpetuity immediate with annual payments. The first payment is 3 and subsequent payments are 3 more than their preceding payments. Perpetuity B is a lever payment perpetuity immediate with annual payments of 3. Using an annual effective interest rate of 5%, the present value of Perpetuity A is X, and the present value of Perpetuity B is Y. Determine the ratio X/Y | |
| | (A) 18.4 | |
| | (B) 19.1 | |
| | (C) 19.8 | |
| | (D) 20.3 | |
| | (E) 21.0 | |
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| 2. | The initial payment of a 20-year annuity immediately subsequent payments are 5% more than each provalue of the annuity, immediately before the firs 10.25% compounded annually. | eceding payment. Determine the present |
| | (A) 575 | |
| | (B) 600 | |
| | (C) 1100 | |
| | (D) 1150 | |
| | (E) 1200 | |
| | | |



| 5. | The present value of a $4n$ -year annuity due with annual payments of R is 737.62, and the present value of a $2n$ -year annuity due with annual payments of $2R$ is 1173.86, with both annuity values determined using an annual effective discount rate, d . Using the same d , the accumulated value of a $3n$ -year annuity due with annual payments of 3 is 688.78 . Determine d . |
|----|---|
| | (A) 2.8% |
| | (B) 2.9% |
| | (C) 3.0% |
| | (D) 3.1% |
| | (E) 3.2% |
| | |
| 6. | Ed invests 1000 in an account that pays interest annually at an annual effective interest rate of 5% . Each interest payment Ed receives, he reinvests in an account that pays an annual effective interest rate equal to i . Just after the interest payment at the end of 10 years, Ed has accumulated interest of 659. |
| | Nancy invests 100 at the end of each year in an account that pays interest annually at an annual effective interest rate of 5%. Each interest payment Nancy receives, she also reinvests in an account that pays an annual effective interest rate equal to i . |
| | Determine the amount of accumulated interest Nancy has just after the interest payment at the end of 10 years. |
| | (A) 208 |
| | (B) 265 |
| | (C) 323 |
| | (D) 377 |
| | (E) 420 |

| 7. | A 20-year annuity has level payments at the end of each month during each year. The first year's monthly payments are 100 each. Subsequent years' monthly payments are 3% less than the previous year's monthly payments. Using an annual effective interest rate of 3%, determine the accumulated value of this annuity immediately after the last payment. |
|----|--|
| | (A) Less than 25500 |
| | (B) Greater than or equal to 25500, but less than 25550 |
| | (C) Greater than or equal to 25550, but less than 25600 |
| | (D) Greater than or equal to 25600, but less than 25650 |
| | (E) Greater than or equal to 25650 |
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| 8. | The initial payment of a perpetuity with semiannual payments is 12. The next payment is 15 followed by a payment of 9. Payments continue in this pattern: 12, 15, 9, 12, 15, 9, Using an annual effective discount rate of 19%, determine the present value of the perpetuity one year before the first payment. |
| | (A) 47 |
| | (B) 54 |
| | (C) 73 |
| | (D) 98 |
| | (E) 122 |
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