

### Section 2.3 Additional Problems

1. Suppose the effective annual interest rate is 5%. Which is worth more, a perpetuity that pays 1 and the end of the first year and increases 1% per year or a 10 year annuity pays 1 and the end of the first year and increases 3% per year.
2. Show that  $la_n$  (the present value of an arithmetically increasing annuity) +  $Da_n$  (the present value of a decreasing annuity) is equal to  $(n+1)a_n$  by:
  - a. Using the formulas for  $la_n$  and  $Da_n$
  - b. Drawing a picture of the two sets of payments.