

In-class

1. Eric deposits X into a savings account at time 0, which pays interest at a nominal rate of i , compounded semiannually. Mike deposits $2X$ into a different savings account at time 0, which pays simple interest at an annual rate of i . Eric and Mike earn the same amount of interest during the last 6 months of the 8th year. Calculate i .
2. Smith lends Jones 1000 on January 1, 2007 on the condition that Jones repay 100 on January 1, 2008, 100 on January 1, 2009, and 1000 on January 1, 2010. On July 1, 2008, Smith sells to Brown the rights to the remaining payments for 1000, so Jones makes all future payments to Brown. Let j be the 6-month rate earned on Smith's net transaction, and let k be the 6-month rate earned on Brown's net transaction. Are j and k equal? If not, which is larger?
3. The parents of three children aged 1, 3, and 6 wish to set up a trust fund that will pay 25,000 to each child upon attainment of age 18, and 100,000 to each child upon attainment of age 21. If the trust fund will earn effective annual interest at 10%, what amount must the parents now invest in the trust fund?