

1. A person would like to make a down payment on a house in 5 years, so he saves \$400 a month at 4% APR. How much will he have for the down payment after 5 years?
2. A new employee has a salary of \$48,000 per year. He has 5% of his monthly pay invested in a retirement plan that earns 8% APR. Assuming these numbers hold throughout his career, how much will he have in his retirement account after 45 years?
3. In the previous problem, find the future value if he invested 10% of his income.
4. In the previous problem, if he earns 10% APR, what percentage of his income should he invest if he wants to have \$3,000,000 after 45 years?
5. An HSC alumnus has a newborn son whom he would like to send to HSC in 18 years, so he had better start saving now. He estimates that the cost will rise at an average of 6% APR over the next 18 years. Right now the cost is about \$52,000.
  - (a) If the cost does grow at 6% APR, what will the cost be after 18 years?
  - (b) How much should the alumnus save per month at a 9% APR in order to have enough cash for four years' worth of fees?