Corporate Finance

1. The Jay Company has just made a big sale and wants to pay its rent for the whole year in advance while it has the money to do so. Previously, Justin paid $2,000 in rent every month. Assuming an annual interest rate of 6%, what single sum of money should Justin be willing to pay? (Note: Assume in this scenario rents are paid at END of the month to follow the normal assumptions we’ve done thus far in class. Calculating payments at the beginning of a period requires slight adjustments which we will ignore here.)
2. You and your spouse are saving money to purchase your dream house when you retire in 15 years. Currently, the house costs $150,000 and you expect it to appreciate at a 3% annual rate of inflation. In order to pay cash for the house when you retire in 15 years, you’ve set up a savings account that pays 5% compounded annually. How much will you have to deposit in the savings account at the end of each year in order to be able to buy the house for cash when you retire fifteen years from now?

Step 1: How much will the dream house cost in 15 years?

Step 2: How much will you have to deposit at the end of each of the next 15 years in order to purchase the house?

1. Johnny just purchased a new hybrid car costing $40,000. He put down $10,000 of savings and borrowed the remaining $30,000 from his credit union at a 6% annual rate of interest over a 5-year period. What is Johnny’s monthly car loan payment?
2. You are a judge in Jurisdiction X. It is Jan. 1, 2021, and you are about to issue your ruling in a massive class-action tort suit, finding the defendant corporation liable. The original damages were all incurred on Jan. 1, 2011, and you’ve determined that they amounted to $10 million at the time. What is the total damages amount that you should award to the plaintiffs in your ruling, assuming the defendant’s opportunity cost of capital over the relevant period was 15%.
3. You are the CFO of X Corp., trying to decide which of several projects X Corp. should pursue. Assuming that the appropriate discount rate for each of these projects is 10%, which projects would you recommend to the board of directors?
   1. Project A: Invest $5 million today, get back $8 million in 5 years.
   2. Project B: Invest $5 million today and another $1 million in 3 years, and get back

$10 million in 7 years.

* 1. Project C: Invest $10 million today, and get back $1.5 million every year for the following 15 years.

1. You discover a tiny new island in the Pacific with gorgeous beaches and a lush rainforest. Under applicable international law (in my world—not the real world), this discovery makes you the rightful owner of the island. Unfortunately, you don’t have the time or money to do anything with it, so you decide to lease it to a real estate developer in perpetuity (subject to the right for you and your friends to visit the island at any time, of course). The developer proposes $2 million/year for the annual lease payment. Assuming that the appropriate discount rate for this type of project is 13%, how much are the lease payments worth to you today.
2. You want to purchase on the market a $1,000 X Corp. bond with an annual coupon rate of 12.75% (paid annually). The bond matures 3 years from today, and you just missed a coupon payment, so you’ll get your first one in one year. What will you have to pay to buy the bond, assuming that the yield on the comparable corporate bonds is 8%?