

# Discounted Cash Flow Valuation

## Class Exercise

1. You've been hired to consult on a lawsuit. Asher is suing Dairy Queen due to severe ice burns caused by their signature Blizzard treat. The injuries will prevent the plaintiff from continuing to work in the voice over industry. The plaintiff and defendant have agreed on the terms of the settlement and you have been hired to determine what the payout today should be. The lawyers pass along the following information i) Two years of backpay based on prior salaries of \$44,000(t-2) and \$48,000(t-1), respectively. ii) 7 years of future salary, estimated to be \$52,000; iii) Legal fees of \$25,000 and Pain and suffering award of \$100,000. Assume salary is paid out equally at the end of the month. The appropriate EAR after accounting for monthly compounding is 7%. Based on the terms of this agreement what is the cash payout to be made to the plaintiff today? Should the plaintiff argue for a higher or lower interest rate? Why?

Skills tested: FV and PV of Annuities, EAR to APR

2. You've been hired to consult for the buy-out of an annuity. The five-year annuity is set to payout \$6,200 semi-annually starting 9 years from now, i.e. the first payment is 9 years from now. The discount rate is 9% compounded monthly. What is the value of this annuity 5 years from now? What type of annuity is this?

Skills tested: PV of Annuities, Annuity Due vs Ordinary Annuity, Compounding period not equal to Payment period, APR to EAR

3. You are trying to decide if you should get an MBA. As an analytical thinker, you decide the best course of action is to calculate the value of a) Staying at job and b) Getting an MBA. If you stay employed you will work 38 more years and your salary next year is \$56,000 and expected to grow at 3% thereafter. The MBA program is two-years of full-time enrollment. Tuition is \$50,000 paid out at the beginning of the year. You estimate an additional \$2,500 in school supplies. Given the track record of the MBA program you expect to earn \$90,000 coming out of the program with an additional signing bonus of \$15,000 paid out immediately (after graduation). This job will see 4% annual salary growth. For simplicity assume the salary is paid out entirely at the end of the year and the appropriate discount rate is 6%. Assume a 22% average tax rate. Based on this information alone, should you get an MBA?

Skills tested: PV of Annuities, PV of Growing annuities.

4. The image below is a new option on Chase Sapphire Reserved Credit card. A payment plan with no interest and a fee. Is this really interest free? For all three options above calculate the implied APR based on the monthly payments (including the fee). Is this better or worse than a quoted APR of 14.99%.

## Account



CREDIT CARD (...5452)

## Selected purchase

Date	Description	Amount
Feb 15, 2021	STATE FARM INSURANCE	\$353.64

## Payment plan options

<p><b>\$120.21</b> /month</p> <p>3 payments</p> <p>This amount includes a monthly fee of \$2.33 with no interest.</p>	<p><b>\$61.34</b> /month</p> <p>6 payments</p> <p>This amount includes a monthly fee of \$2.40 with no interest.</p>	<p><b>\$41.78</b> /month</p> <p>9 payments</p> <p>This amount includes a monthly fee of \$2.48 with no interest.</p>
---	--	--

If you receive interest rate and fee benefits under the Servicemembers Civil Relief Act or similar state laws, they'll apply to this plan once it's active and throughout your benefit period.

**Next**

