ECON 180 FALL 2022: PROJECT 5

DUE December 6 by 11:59 PM VICTORIA, B.C. TIME

Honor Code: I guarantee that this submission is **entirely my own work**. I have **cited any outside sources** in APA or IEEE style. **(You must accept this code to receive a mark.)**

IMPORTANT NOTE: THIS IS THE LAST ASSESSMENT IN THE COURSE THAT YOU CAN USE YOUR MENTAL HEALTH VOUCHER FOR, AS PROJECT 6 IS TREATED AS A FINAL EXAM FOR DEADLINE, EXTENSION, ETC. PURPOSES.

Name or Signature for Honor Code: Arfaz Hossain

Last 3 digits of student number: 826

Please enter your answers in the spaces and tables provided. Your submission must be in either PDF or Microsoft 365 (Word, etc.) format, so Brightspace can read it properly.

Question		Marks
1	a-d	75 each
	Q1 (Average)	75
2	a	75
3	a-b	75 each
	Q3 (Average)	75
Q1 to Q3 (Average)		75
4 (Chall.)	a	4
	b	2
	c	2
	Q4 (Total)	8
5 (Chall.)	a	4
	b	3
	Q5 (Total)	7
Q4 to Q5	Total	15
Communication		10
Total (Q1 to Q3) + Q4 + Q5 + Comm.		100

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Question 1: Marginal vs. Average Tax Rates (Lecture 31)

The following are the **provincial income tax rates and brackets**[1] for B.C. in 2022 (for individuals):

B.C. Provincial Income Tax		
Bracket		Tax Rate
$0.00	$43,070.00	5.06%
$43,070.01	$86,141.00	7.70%
$86,141.01	$98,901.00	10.50%
$98,901.01	$120,094.00	12.29%
$120,094.01	$162,832.00	14.70%
$162,832.01	$227,091.00	16.80%
$227,091.01	Infinite	20.50%

The following are the **federal income tax rates and brackets**[2] in 2022 (for individuals):

Federal Income Tax		
Bracket		Tax Rate
$0.00	$50,197.00	15.00%
$50,197.01	$100,392.00	20.50%
$100,392.01	$155,625.00	26.00%
$155,625.01	$221,708.00	29.00%
$221,709.00	Infinite	33.00%

[1] Source: https://www2.gov.bc.ca/gov/content/taxes/income-taxes/personal/tax-rates
[2] Source: https://www.canada.ca/en/revenue-agency/services/tax/individuals/frequently-asked-questions-individuals/canadian-income-tax-rates-individuals-current-previous-years.html

Suppose Mandeep's taxable income for 2022 is equal to the baseline income for Victoria from Project 1, (or $79,214, if you didn't complete Project 1 – that's the value I used in the Project 1 answer key), and that **Mandeep pays both B.C. and federal income taxes**.

2.a Marginal Tax Rates

What is Mandeep's marginal tax rate? Include the effect of both federal and provincial taxes. Show your work. (Recall that the marginal tax rate can be thought of as the tax rate on the next dollar earned.)[3] **Hint: This question can be answered very quickly – a minute or three, if you understand what you're trying to find. Try not to overthink it.**

Marginal tax rate: _____28.2_____ %

[Work]

I'm using $79,214 as my original income value. The marginal tax rate is 28.2 (7.70% provincial and 20.50% local) as $79,214 lies between $43,070 and $86,141.

2.b Average Tax Rates

What is Mandeep's average tax rate? Show your work. (Recall that the average tax rate is equal to total tax paid, as a percentage of taxable income.)

Average tax rate: _____52.3972_____ %

[Work]

$43070 x 5.06% = $2176.342 (Provincial)
$36144 x 7.70% = $2783.088 (Provincial)
$50197 x 15% = $7529.55 (Federal)
$29017 x 20.50% = $29017 (Federal)

Total Taxed = $41505.98
$41505.98 / $79,214 x 100 = 52.3972%

[3] If Mandeep's taxable income is $100,000, the marginal tax rate is the tax rate that would be paid on a hypothetical 100,001st dollar earned.

2.c Tax Deductions

How much is a $100 tax deduction worth to Mandeep, if it is a **provincial tax deduction** that affects only **provincial income tax**? Briefly explain your reasoning. (The "worth" of a tax deduction is equal to the reduction in taxes payable due to the deduction.)

Worth of a $100 tax deduction:

[Work]

$43070 x 5.06% = $2176.342 (Provincial)
**$36044 x 7.70% = $2775.388 (Provincial)*
$50197 x 15% = $7529.55 (Federal)
$29017 x 20.50% = $29017 (Federal)

Total Taxes Payable Before = $41505.98
Total Taxes Payable After = $41498.28
Worth of Tax Deduction = $(41505.98 - 41498.28) = $7.7

2.d Tax Credits

How much is a $100 **refundable tax credit** worth to Mandeep, if it is a **provincial tax credit** that affects only **provincial income tax**? Briefly explain your reasoning. (The "worth" of a tax credit is equal to the reduction in taxes payable due to the tax credit.) **Hint: This is another question that is *very* quick if you understand what you're looking for.**

Worth of a $100 refundable tax credit: _____$100_____

[Work and/or Reasoning]

$43070 x 5.06% = $2176.342 (Provincial)
$36144 x 7.70% = $2783.088 (Provincial)
$50197 x 15% = $7529.55 (Federal)
$29017 x 20.50% = $29017 (Federal)

Total Tax Due Before Credit = $41505.98
Total Tax Due After Credit = $41405.98

Question 2: Complete Tax Calculation (Lectures 31 and 32)

Note: This question and the following one provide a *simplified* version of the tax issues involved in purchasing a zero emissions vehicle in Canada. One of the challenge questions will allow you to try your hand at a more realistic version.

The firm Mandeep is working for during their co-op term is switching its fleet of vehicles to zero-emissions vehicles (ZEV), and Mandeep is tasked with performing a complete tax calculation on the net present value (NPV) of the purchase of a ZEV.

- Assume all values and rates given below are nominal, so you don't have to worry about adjusting them for inflation.
- Your firm's before-tax MARR is 6.8% per year.[4]
- The relevant tax rate is t = 27% (15% federal + 12% B.C.)
- It is appropriate to use the usual rule of thumb to calculate the after-tax MARR.
- The firm will buy the ZEV on January 1, 2023 and will sell it on January 1, 2028.
- The initial cost of the ZEV is $51,495.00[5]
- The ZEV is expected to provide the company yearly "income" of $1,250 in the form of fuel & maintenance savings every year.[6]
- The resale value of a ZEV falls by $7,500 every year (so that on January 21, 2024, the resale value would be $51,495 - $7,500 = $43,995, and so on).[7]
- The ZEV counts as a Class 54 good, so CRA-mandated depreciation rate for tax purposes is d=30% per year.[8]

[4] Based on a 2022 study of the Cost of Capital by KPMG: https://home.kpmg/de/en/home/insights/2022/10/cost-of-capital-study-2022.html
[5] Based on the cost of the Ford Mustang MACH-E: https://www.ford.ca/suvs/mach-e/ , which was recommended as a ZEV for business use by Autocar UK: https://www.autocar.co.uk/car-news/advice-company-cars/top-10-best-electric-company-cars
[6] Roughly in line with the $800-$1,000 USD fuel savings mentioned by Consumer Reports: https://www.consumerreports.org/hybrids-evs/evs-offer-big-savings-over-traditional-gas-powered-cars/
[7] This is roughly in line with the $5,700 USD yearly drop in value mentioned by Forbes, as reported by Endurance Warranty: https://www.endurancewarranty.com/learning-center/finance/electric-vehicles-declining-resale-values/
[8] See https://www.canada.ca/en/revenue-agency/services/tax/businesses/topics/sole-proprietorships-partnerships/report-business-income-expenses/claiming-capital-cost-allowance/classes.html It's quite a bit more complicated than that, as you'll see in a challenge question, but I'll keep it simple for now.

2.a After-tax NPV for a Simple Investment

What is the after-tax net present value of this machine? Show your work. (Hint: You'll need to use CTF and CSF).

After-Tax Net Present Value: -$27,170.05314

[Work]

Tax Rate, t = 27%
$MARR_{bt}$ = 6.80%
$MARR_{at}$ = $MARR_{bt}$ x (1-t) = 4.96%
CSF = 1 – (27% × 30%) / (4.964% + 30%) = 6716/8741 = 0.7683331427
CTF = 1 – [(27%) × (30%) × {1+ (4.964%/2)}] / [(4.964% + 30%) × (1+4.964%)] = 0.7738111841

Resale Salvage Value, annual:

Year	Resale Value
2023	$51,495.00
2024	$43,995.00
2025	$36,495.00
2026	$28,995.00
2027	$21,495.00
2028	$13,995.00

PW = (-$51,495 × CTF) + ($1,250 × (1-27%) × (P/A, 4.964%, 6)) + ($13,995 × CSF × (P/F, 4.964%, 6))
= -$39,847.40693 + ($912.5 × (P/A, 4.964%, 6)) + ($10,752.82233 × (P/F, 4.964%, 6))
= -$27,170.05314

The machine has an after-tax negative present worth. It should not be brought.

Question 3: Capital Cost Allowance (Lecture 32)

Consider the following sequence of events, which are based on similar information to that in Question 2.

- The relevant tax rate for Mandeep's firm is t = 27%.
- Mandeep's firm has signed a contract with a ZEV dealer that allows it to buy ZEV for $51,495.00 each at any time from 2023 to 2033.
- The same contract allows the firm to sell the ZEV back to the dealer. The dealer pays the same resale value that we used in Question 2: that is, the resale value of the ZEV falls by $7,500 a year.
- The ZEV is class 54 good, so the relevant d=30% per year for tax purposes.
- In 2023, the firm buys a ZEV which it sells back in 2028. This is the firm's first purchase of a class 54 good, ever.
- In 2025, the firm buys a ZEV which it sells back in 2029.
- In 2028, the firm buys a ZEV which it sells back in 2032
- In 2029, the firm buys a ZEV which it sells back in 2033.
- After the sale in 2033, the firm buys no more class 54 goods (the class 54 account is 'closed out').
- Mandeep's firm always claims the maximum CCA each year (as in the lecture examples).

3.a Remaining UCC

i. Calculate the firm's Class 54 remaining UCC after the sale in 2033. Show your work.

Remaining UCC: $0 *since the negative remaining UCC of -$10,339.56 on the year 2033 is being recaptured.*

[Work]

Year	Purchase	Sale	Purchase - Sale	Including Last UCC	Base UCC	CCA @30%	Remaining UCC
2022	-	$0.00	-	-	-	-	0
2023	$51,495.00	$0.00	$51,495.00	$51,495.00	$25,747.50	$7,724.25	$43,770.75
2024	$0.00	$0.00	$0.00	$43,770.75	$43,770.75	$13,131.23	$30,639.53
2025	$51,495.00	$0.00	$51,495.00	$82,134.53	$56,387.03	$16,916.11	$65,218.42
2026	$0.00	$0.00	$0.00	$65,218.42	$65,218.42	$19,565.53	$45,652.89
2027	$0.00	$0.00	$0.00	$45,652.89	$45,652.89	$13,695.87	$31,957.02
2028	$51,495.00	$13,995.00	$37,500.00	$69,457.02	$50,707.02	$15,212.11	$54,244.92
2029	$51,495.00	$21,495.00	$30,000.00	$84,244.92	$69,244.92	$20,773.48	$63,471.44
2030	$0.00	$0.00	$0.00	$63,471.44	$63,471.44	$19,041.43	$44,430.01
2031	$0.00	$0.00	$0.00	$44,430.01	$44,430.01	$13,329.00	$31,101.01
2032	$0.00	$21,495.00	-$21,495.00	$9,606.01	$9,606.01	$2,881.80	$6,724.20
2033	$0.00	$21,495.00	-$21,495.00	-$14,770.80	-$14,770.80	-$4,431.24	-$10,339.56
2034	-	-	-	-	-	-	-

First Sale	Second Sale	Third Sale	Fourth Sale
-	-	-	-
$51,495.00	-	-	-
$43,995.00	-	-	-
$36,495.00	$51,495.00	-	-
$28,995.00	$43,995.00	-	-
$21,495.00	$36,495.00	-	-
$13,995.00	$28,995.00	$51,495.00	-
-	$21,495.00	$43,995.00	$51,495.00
-	-	$36,495.00	$43,995.00
-	-	$28,995.00	$36,495.00
-	-	$21,495.00	$28,995.00
-	-	-	$21,495.00

Salvage values from the second figure is being calculated from fiscal year 2022 to 2033 and the first-to-last notation indicates the selling of the ZEVs throughout the years, 2023-2028, 2025-2029, 2028-2032, 2029-2033.

3.b Terminal Loss and Recapture

Since Mandeep's firm is 'closing out' its Class 54 account in 2033, any remaining non-zero UCC is either a terminal loss or a recapture.

i. In 2033, will Mandeep's firm face a terminal loss, recapture, or neither from Class 54?

(Terminal Loss/Recapture/Neither) : Recapture

[Briefly explain your reasoning]

The final UCC is smaller than $0, negative, so this means that the UCC is being recaptured and will be added into the firm's tax bill for next financial year.

ii. Assume the relevant tax rate is t=27%, and the firm's taxable income is over half a billion dollars[9]. By how much will this terminal loss or recapture increase or decrease the taxes Mandeep's firm has to pay in 2033? Briefly explain your reasoning.

(Hint: This is not a trick question. Given your answers to parts i. and ii. and the information given, it should be very straightforward.)

Change in tax bill for the 2033 tax year: Addition of +$10,339.56 to the firm's tax bill for the year 2033.

[Briefly explain your reasoning]

The final UCC is smaller than $0, negative, so this means that the UCC is being recaptured and will be added into the firm's tax bill for next financial year.

[9] This assumption is just so that you don't have to worry about whether a large enough tax deduction (if there is one) would send the firm's taxable income below zero.

4. Challenge: Tax brackets & Indexation (Lecture 31) (8 marks)

This question was inspired by Dr. Lindsay Tedd's July 2022 blog post, "Implications of taxation without indexation in Alberta", which you may wish to read or skim, as it walks you through some sample calculations: https://deadfortaxreasons.wordpress.com/2022/07/05/implications-of-taxation-without-indexation-in-alberta/

In response to inflation, between 2020 and 2022 B.C. changed its tax brackets as follows:[10]

2020		2021		2022		
FROM	TO	FROM	TO	FROM	TO	TAX RATE
$0.00	$41,725.00	$0.00	$42,184.00	$0.00	$43,070.00	5.06%
$41,725.01	$83,451.00	$42,184.01	$84,369.00	$43,070.01	$86,141.00	7.70%
$83,451.01	$95,812.00	$84,369.01	$96,866.00	$86,141.01	$98,901.00	10.50%
$95,812.01	$116,344.00	$96,866.01	$117,623.00	$98,901.01	$120,094.00	12.29%
$116,344.01	$157,748.00	$117,623.01	$159,483.00	$120,094.01	$162,832.00	14.70%
$157,748.01	$220,000.00	$159,483.01	$222,420.00	$162,832.01	$227,091.00	16.80%
$220,000.01	Infinity	$222,420.01	Infinity	$227,091.01	Infinity	20.50%

2.a Taxes paid *with* indexation (4 marks)

Suppose an engineer earned your **baseline Victoria income in 2020**, (1+3.5%) times the baseline Victoria income in 2021, and $(1+3.5\%)^2$ times the baseline Victoria income in 2022 (**that is, their income started at the baseline level in 2020, and grew by 3.5% each year**). How much provincial tax, in total, did this engineer pay from 2020 to 2022? Show your work.

Total provincial income tax owed, 2020 to 2022: $14311.0989

[Show your work here]

Taking the baseline salary of Victoria as a Software Engineer as $73,850 in 2020 (per my values in project 1), the salary would be $76434.75 in 2021 and $79109.96625 in 2022.

Provincial Income taxes owed in 2020: ($41,725 × 5.06%) + ($32,125 × 7.70%) = $4584.91
Provincial Income taxes owed in 2021: ($42,184 × 5.06%) + ($34250.75 × 7.70%) = $4771.7604
Provincial Income taxes owed in 2022: ($43,070 × 5.06%) + ($36039.96625 × 7.70%) = $4954.419401

Total Taxes Owed = ($4584.91 + $4771.7604 + $4954.419401) = $14311.0989

[10] Taken from https://www2.gov.bc.ca/gov/content/taxes/income-taxes/personal/tax-rates for 2022, and from snapshots of the same page in 2020 and 2021 via the Wayback Machine: https://web.archive.org/web/20210201000000*/https://www2.gov.bc.ca/gov/content/taxes/income-taxes/personal/tax-rates

2.b Taxes paid if indexation had not happened (2 marks)

Suppose that instead of changing the tax brackets each year, B.C. had kept them constant at the level they were in 2020. How much provincial tax, in total, would the same engineer have had to pay from 2020 to 2022? (This should be pretty quick to calculate, since you can 'borrow' some of the numbers you had to calculate in part a.)

Total provincial tax owed, 2020 to 2022, if tax brackets had stayed at 2020 levels: $14358.77315

[Show your work here]

Taking the baseline salary of Victoria as a Software Engineer as **$73,850** in 2020 (per my values in project 1), the salary would be **$76434.75** in 2021 and **$79109.96625** in 2022.

Provincial Income taxes owed in 2020: ($41,725 × 5.06%) + ($32,125 × 7.70%) = $4584.91
Provincial Income taxes owed in 2021: ($41,725 × 5.06%) + ($34709.75 × 7.70%) = $4783.93575
Provincial Income taxes owed in 2022: ($41,725 × 5.06%) + ($37384.96625 × 7.70%) = $4989.927397

Total Taxes Owed = ($4584.91 + $4783.93575 + $4989.927397) = $14358.77315

2.c Good idea or bad idea? (2 marks)

c. (2 marks) In Budget 2019, Alberta (NOT British Columbia) wrote the following: "With the need to control spending, continuing to index these benefits is unaffordable for the time being. As a result, Alberta will pause the indexation of non-refundable tax credits and tax bracket thresholds, with the 2019 amounts carried forward for the 2020 and future tax years. Alberta will resume indexing the tax system once economic and fiscal conditions can support it."[11] Based on what you learned from your calculations, and from reading or skimming Dr. Tedd's blog post (if you did so), do you think it was a good idea for Alberta to stop adjusting (indexing) its tax brackets for inflation during the entire COVID-19 pandemic era? Why or why not? Briefly explain your reasoning.

Good idea or bad idea by Alberta? Bad idea, *in a nutshell*, details below.

[Write your reasoning here – it's fine to keep it very short, say, 1 to 3 sentences.]

I am going to quote these lines from the blog post, as follows:

As you can see the concept of indexation is fairly simple, however, how indexation affects any one person is complicated. Either way, de-indexing tax brackets, and credits is really BAD tax policy. Even if the UCP government were to reverse this policy for 2023, if it does not grandfather in the cumulative changes, most Albertans will pay more in taxes in perpetuity.

For any general taxpayer, an unchanged tax bracket was a bad idea as: a general increase of prices due to inflation wouldn't help cool down the economy by making everyone pay more taxes. It wouldn't make sense for one to have to calculate how much money they will be left with at the end of the year after taxes when they do groceries and need-based purchases. Although the unchanged tax bracket won't cause the income of an individual taxpayer like Mandeep (amounts to the income from 4A and 4B) to get dipped down significantly, for someone with an income a bit closer to the next tax bracket (~$83451.01) or any tax bracket, an increase in the income growth would be significantly capped than it would have been, under a changed annual tax bracket.

[11] Source: https://open.alberta.ca/dataset/3d732c88-68b0-4328-9e52-5d3273527204/resource/2b82a075-f8c2-4586-a2d8-3ce8528a24e1/download/budget-2019-fiscal-plan-2019-23.pdf

5. Challenge: Special CCA rates for ZEV (Lecture 32) (7 marks)

The federal government wants to encourage investment in zero-emissions vehicles. One way in which it is doing so is by offering, on a temporary basis, very generous CCA rates. Accordingly, on October 1, 2020, the Office of the Parliamentary Budget Officer issued the following statement:

"The government is introducing a 100% depreciation rate in the year of purchase for eligible zero-emission vehicles (ZEVs) purchased by a business. […] The 100% rate will apply to eligible vehicles purchased on or after March 2, 2020 and will expire on December 31, 2027 with a gradual phase out beginning January 1, 2024. Specifically, a 75% rate will apply to eligible vehicles purchased between January 1, 2024 and December 31, 2025 and a 55% rate will apply to purchases made between January 1, 2026 and December 31, 2027."[12]

The CRA (Canada Revenue Agency) spells out exactly how this is to be done for Class 54 goods on its web site[13]:

"An enhanced first year CCA deduction with the following phase-out period is available:

- 100% after March 18, 2019, and before 2024
- 75% after 2023 and before 2026
- 55% after 2025 and before 2028
- [After 2028, the usual Class 54 rules apply – that is, the ones from Question 3.]

The enhanced first-year allowance will be calculated by:

- increasing the net capital cost addition to the new class for property that becomes available for use before 2028, and applying the prescribed CCA rate for the class as described below:
    - For Class 54, applying the prescribed CCA rate of 30% to:
        - 2 1/3 times the net addition to the class for property that becomes available for use before 2024
        - 1 1/2 times the net addition to the class for property that becomes available for use in 2024 or 2025
        - 5/6 times the net addition to the class for property that becomes available for use after 2025 and before 2028 […]
        - **suspending the existing CCA half-year rule** [emphasis mine – the half-year rule is replaced with the rules listed in the bullet points above]
        - The CCA will be applicable on any remaining balance in the new classes using the specific rate for the new class."

For this challenge question, *repeat question 3.i* while taking these rules into account. The "net addition to the class that becomes available for use" refers to a positive value for (purchases-dispositions) in the year of a ZEV purchase.

5.a Marks just for giving it an honest try, right or wrong (4 marks)

In recognition that this is an unusually challenging question, you'll receive 4 out of the 7 marks just for giving the question an honest try, by which I mean you went year by year and tried to adjust the values for the rules above. The TA will be looking at your work in part b. below.

5.b Following CRA guidelines for CCA and Class 54 ZEVs (3 marks)

[12] Source: Nahornick, N. (2020, October 1). Legislative Costing Note: Full Depreciation for Business Investment in Zero-Emission Vehicles. https://www.pbo-dpb.ca/en/publications/LEG-2021-036-S--full-depreciation-business-investment-in-zero-emission-vehicles--amortissement-complet-investissement-entreprises-dans-vehicules-emission-zero

[13] https://www.canada.ca/en/revenue-agency/services/tax/businesses/topics/sole-proprietorships-partnerships/report-business-income-expenses/claiming-capital-cost-allowance/classes-depreciable-property.html#class54class55

The remaining 3 marks will be assigned on a "0,1,2,3" = "tried, but didn't quite get there, acceptable understanding, pretty good answer, perfect answer" basis.

The copy-pasted question, with a slight modification in yellow highlight, follows:

Consider the following sequence of events, which are based on similar information to that in Question 2.

- The relevant tax rate for Mandeep's firm is t = 27%.
- Mandeep's firm has signed a contract with a ZEV dealer that allows it to buy ZEV for $51,495.00 each at any time from 2023 to 2033.
- The same contract allows the firm to sell the ZEV back to the dealer. The dealer pays the same resale value that we used in Question 2: that is, the resale value of the ZEV falls by $7,500 a year.
- The ZEVs are class 54 goods, subject to the special rules listed above.
- In 2023, the firm buys a ZEV which it sells back in 2028. This is the firm's first purchase of a class 54 good, ever.
- In 2025, the firm buys a ZEV which it sells back in 2029.
- In 2028, the firm buys a ZEV which it sells back in 2032
- In 2029, the firm buys a ZEV which it sells back in 2033.
- After the sale in 2033, the firm buys no more class 54 goods (the class 54 account is 'closed out').
- Mandeep's firm always claims the maximum CCA each year (as in the lecture examples).

i. Calculate the firm's Class 54 remaining UCC after the sale in 2033. Show your work.

Remaining UCC: $0, recaptured $13,360.11

[Work]

1. Based on what I understood, *if I understood correctly*, "Phase-Out" periods of CCA are CCA's one can claim after the year of acquisition but NOT the year of acquisition (so if one buys a ZEV in 2020, they can claim a CCA of 30% on that year ONLY) as it says "*For Class 54, applying the prescribed CCA rate of 30% to...*" but the following years of the UCCs will be calculated from the 'Phase-Out-CCA-Rates' in the given time-frames. I used the usual 30% CCA rate for the year of purchase (as shown by the blue highlighted cells), as I am confused by the wording of the bullet points. The 'Phased-Out' CCA rates used in the following years as shown in the highlighted orange cells.
2. By "*2 1/3 times...*", "*1 1/2 times...*" I took these as equivalent to mathematical $2\frac{1}{3}$ and $1\frac{1}{2}$ which is also equivalent to (2+1/3) and (1+1/2). The calculations are done in the highlighted green cells.

Year	Purchase	Sale	Purchase - Sale	Including Last UCC	Base UCC	CCA	Remaining UCC
2022	-	$0.00	-	-	-	-	0
2023	$51,495.00	$0.00	$51,495.00	$51,495.00	$120,155.00	$36,046.50	$15,448.50
2024	$0.00	$0.00	$0.00	$15,448.50	$15,448.50	$11,586.38	$3,862.13
2025	$51,495.00	$0.00	$51,495.00	$55,357.13	$81,104.63	$24,331.39	$31,025.74
2026	$0.00	$0.00	$0.00	$31,025.74	$31,025.74	$17,064.16	$13,961.58
2027	$0.00	$0.00	$0.00	$13,961.58	$13,961.58	$7,678.87	$6,282.71
2028	$51,495.00	$13,995.00	$37,500.00	$43,782.71	$25,032.71	$7,509.81	$36,272.90
2029	$51,495.00	$21,495.00	$30,000.00	$66,272.90	$51,272.90	$15,381.87	$50,891.03
2030	$0.00	$0.00	$0.00	$50,891.03	$50,891.03	$15,267.31	$35,623.72
2031	$0.00	$0.00	$0.00	35623.72016	35623.7202	10687.11605	$24,936.60
2032	$0.00	$21,495.00	-$21,495.00	3441.604114	3441.60411	1032.481234	$2,409.12
2033	$0.00	$21,495.00	-$21,495.00	-19085.87712	-19085.877	-5725.763136	-$13,360.11
2034	-	$0.00	-	-	-	-	-

As with Question 2, the year of 2033 shows a negative UCC balance, which will be captured into next year's taxed income.