

Question 1

1. Initialize variables L, H and V
1. Ask the user for a sidelength, set that value equal to L
2. If $L \leq 0$
 - a. Print to the user "Error, please enter a sidelength that's greater than zero"
 - b. Restart application
3. Ask the user for a height, H
4. If $H \leq 0$
 - a. Print to the user "Error, please enter a height that's greater than zero"
 - b. Restart application
5. Multiply the sidelength L by two, set the calculated value as the new L value.
6. Multiply L by H, set the calculated result equal to V
7. Multiply V by 0.55, set that calculated value as the new V value.
8. Print to screen: "The Carton has a volume of {V} Ounces"

Question 2

1. Initialize variables, x, Breck, Veil and Copper
2. Set Breck = 25
3. Set Veil = 28
4. Set Copper = 40
5. Print "How many days in the future would you like a prediction for?"
6. Ask for an input from the user, set that value equal to x
7. If $x \leq 0$
 - a. Print to the user "Error, please enter an amount of days that's great than zero"
 - b. Restart application
8. Set Breck = Breck + $10x - 5x$
9. Set Veil = Veil + $14x - 2x$
10. Set Copper = Copper + $5x - 3x$
11. Print to screen: "Breckenridge will have {Breck} Inches of snow, Veil will have {Veil} inches of snow and Copper Mountain will have {Copper} inches of snow."

Question 3a

1. Initialize variables footage, pets, price, A, B, C, x and msg
2. Set A,B and C = true
3. Prompt user for their minimum square footage, set the input value equal to footage
4. If footage ≤ 0
 - a. Print to the user "Error, please enter a square footage that's greater than zero"
 - b. Restart application
5. Prompt user for the number of pets they own, set the input value equal to pets
6. If pets < 0
 - a. Print to the user "Error, please enter zero and positive numbers only"
 - b. Restart application
7. Prompt user for the the maximum price they are willing to spend on an apartment, set the input value equal to price
8. If price ≤ 0

- a. Print to the user "Error, please enter a positive value for the maximum price"
 - b. Restart application
9. If pet > 0
 - a. Set B = false
10. If footage > 1000
 - a. Set A = false
 - b. Set B = false
 - c. Set C = False
11. If footage > 800
 - a. Set A = false
 - b. Set B = false
12. If footage > 600
 - a. Set A = false
13. If price < 1400
 - a. Set A = false
 - b. Set B = false
 - c. Set C = false
14. If price < 1600 and price >= 1400
 - a. Set B = false
 - b. Set C = false
15. If price < 1800 and price >= 1400
 - a. Set C = false
16. If a = false and b = false and c = false
 - a. Send "no matches, sorry"
 - b. Exit program
17. If a = true
 - a. Msg = msg + "Apartment A"
 - b. X = x + 1
18. If b = true
 - a. Msg = msg + "Apartment B"
 - b. X = x + 1
19. If c = true
 - a. Msg = msg + "Apartment C"
 - b. X = x+1
20. If x=1
 - a. Print to screen: "You'd love {msg}!"
21. If x > 1
 - a. Print to screen: "You'll love the following apartments: {msg}"

Question 3b

- 900 square feet, yes pets, \$2000 a month -> Apartment A available
- 1100 square feet, no pets, \$1600 a month -> Apartment A and B available
- 700 square feet, yes pets, \$1600 a month -> no apartments available
- 1200 square feet, no pets, \$2000 a month -> Apartment A, B and C available

Question 4

1. Initialize variables days, months, balance, halfBalance lossRate, dayLossRate, dayMonthRate and monthlyWithdraw.
2. Set days and months = 0
3. Set balance = 15000
4. Set lossRate = 0.65
5. Set dayLossRate = lossRate/365
6. Set monthLossRate = dayLossRate x 30
7. Set halfBalance = 0.5balance
8. Set monthlyWithdraw = 100
9. While balance does not equal half balance
 - a. If (balance) - (balance x monthLossRate) > halfBalance
 - i. Set balance = balance - balance x monthLossRate - monthlyWithdraw
 - ii. Months = months + 1
 - b. Else If (balance) - (balance x dayLossRate) > halfBalance
 - i. Set balance = balance - balance x dayLossRate
 - ii. Days = Days + 1
10. Print to screen: "it will take {months} months and {days} days to lose half of your money"

Question 4 b

1. Initialize variables days, months, balance, halfBalance lossRate, dayLossRate, dayMonthRate and monthlyWithdraw.
2. Set days and months = 0
3. Ask user for their initial investment, set inputted value to = balance
4. Ask user for their annual percentage lost rate, multiply the inputted value by .01, set that value to lossRate
5. Ask user for the monthly withdraw amount, set that value equal to monthlyWithdraw
6. Set dayLossRate = lossRate/365
7. Set monthLossRate = dayLossRate x 30
8. Set halfBalance = 0.5 x balance
9. While balance is NOT <= balance
 - a. If (balance) - (balance x monthLossRate) > halfBalance
 - i. Set balance = balance - balance x monthLossRate - monthlyWithdraw
 - ii. Months = months + 1
 - b. Else If (balance) - (balance x dayLossRate) > halfBalance
 - i. Set balance = balance - balance x dayLossRate
 - ii. Days = Days + 1
10. Print to screen: "it will take {months} months and {days} days to lose half of your money"

Question 5

- Compile time errors
 - End line is misspelled as "enl", he should change it to "endl"
 - He forgot a semicolon after his endline, causing a compile time error to occur. If he adds a semicolon after "endl" his code should run.
- Runtime error

- He wrote “hello 1300” for his cout. Instead, he should write “Hello 1300!” to get his desired results.