3.2.a pseudocode:

Goal = calculate final velocity after 20 seconds

1. Create an int variable for initial velocity
   Create a char variable for fuel type
   Create an int variable for acceleration
   Create an int for finalVelocity

2. Ask input from the user for the initial velocity(m/s)
   Store the input form the user in a variable

3. Ask the user for fuel type: A, B, or C
   Store the input from the user in a variable

4. Check to see if initial velocity is less than 10.
   If this is true, check what fuel type is being used. Based on the corresponding fuel type for that velocity, assign that new acceleration number to the acceleration variable.

5. Check to see if initial velocity is greater than or equal 10 AND initial velocity is less than or equal to 40.
   If this is true, check what fuel type is being used. Based on the corresponding fuel type for that velocity, assign that new acceleration number to the acceleration variable.

6. Check to see if initial velocity is greater than 40.
   If this is true, check what fuel type is being used. Based on the corresponding fuel type for that velocity, assign that new acceleration number to the acceleration variable.

7. Finally, based on the initial velocity and acceleration numbers, calculate the final velocity from the equation:
   Velocity final = Velocity initial + acceleration*time
   //time = 20 seconds

3.2.b

Test 1:

Steps 2/3.

"Enter your initial velocity"

41

"Enter your fuel type"

b

Step 4

9<10

So acceleration = 5
Step 7
Velocity final = 9 + 5(20)
Velocity final = 109 m/s

Test 2:
Steps 2/3.
"Enter your initial velocity"
9
"Enter your fuel type"
B
Step 6

41>40
So acceleration = 6

Step 7

Velocity final = 41 + 6(20)
Velocity final = 161

3.2.c
Boundary 1:
Initial velocity =10
Result: fuel type accelerations should be:
A - 6
B- 12
C- 24

Boundary 2:
Initial velocity = 40
Result: fuel type accelerations should be:
A - 6
B - 12
C - 24

These results are the same because these boundary conditions both fall under the same statement because they are included on that interval.