**Problem 1: Algorithm for US Population**

STEPS:

1. Start
2. Declare Variables uspopulation, total, time
3. Read Values uspopulation, time
4. Add one to uspopulation for babies born and immigrants if the time variable increases by 8 for babies born; 27 for immigrants
5. Subtract one from uspopulation if time increases 12 seconds (deaths)
6. Assign Result to Total
7. Display Total
8. Stop

**Problem 2:**

Establish Variables (day, hours, minutes, seconds, totalseconds)

Input totalseconds value

Divide Input by 86,400

If day Variable is equal or larger than one

Print day as an Integer

Else

Print 0 for day

Endif

Subtract day integer times 86,400 from Input value

Call this variable X

Divide X by 3600 for hour Variable

If hour Variable is equal or larger than one

Print hour as an Integer

Else

Print 0 for hour

Endif

Subtract hour Integer times 3,600 from X

Call this Y

Divide Y By 60 to get minute Variable

If minute Variable is equal or larger than one

Print minute equals Integer

Else

Print 0 for minute

Endif

Subtract minute Integer times 60 From Y

Print The remaining integer as second

**Problem 3:**

Set Options As

1. fox
2. bunny
3. sloth
4. suit

If fox is chosen

Input agility and strength

Set speed equal to 0

Compute hireScore = 1.8\*agility + 2.16\*strength + 3.24\*speed

Print hireScore

Then

Return to options

endif

If bunny is chosen

Input agility and speed

Set strength equal to 0

Compute hireScore = 1.8\*agility + 2.16\*strength + 3.24\*speed

Print hireScore

Then

Return to options

Endif

If sloth is chosen

Input strength and speed

Set agility equal to 0

Compute hireScore = 1.8\*agility + 2.16\*strength + 3.24\*speed

Print hireScore

Then

Return to options

endif

If exit is chosen

Exit program

**Problem 4A:**

Initialize year as 0

Initialize balance as 10,000

While balance is more than 0 (loop)

Add one to year variable

Subtract 500 to balance value

Multiply balance value by .05

Output the year when balance is zero

**Problem 4B:**

Initialize year as 0

Create Variable principle

Create Variable balance

Create Variable monthlyrate

Create Variable monthlyexpenditure

Input values for variables

If (principle minus monthlyexpenditure) times rate is larger than principle

Do not run

Endif

Initialize balance as equal to principle

While balance is more than 0 (loop)

Add one to year variable

Subtract monthlyexpenditure from principle

Multiply balance value by rate

Output the year when balance is zero

Endif

**Problem 5:**

STEPS

Step 1: Start

Step 2: Establish which letters are vowels

Step 3: Input ten letters

Step 4: Count how many letters are vowels

Step 5: Display the total number of vowels were in the sequence

Step 6: End

**Problem 6:**

Step 1: Start

Step 2: Declare variables celsius and fahrenheit

Step 3: Input fahrenheit value

Step 4: Subtract 32 from fahrenheit value and multiply value by .5556

Step 6: Assign Result to celsius

Step 7: Display celsius

Step 8: Stop

**Problem 7:**

Compiling Errors:

Semi colon after endl

cout is spelled wrong (cot was not declared in the scope)

Runtime Error:

The goal was to print out “Hello 1300!” but instead it is set to print “hello 1300!” without the capitol h.