**double calcWeightRemaining(weightRemaining, item)**

**Task**:

Determine weight to be added to the wagon and how much weight remains.

**Input:**

item

weightRemaining

**Output:**

Depending on the weight remaining, either add the item to the wagon or reject it.

**Validation Rules:**

If the item.Weight \* item.Quantity > weightRemaining, reject the item and notify the player.

If the item.Weight \* item.Quantity <= weightRemaining, accept the item into the inventory.

If the input item can be separated, store what will store and reject the rest.

**Range:**  0 – 200lb

**List:**  Input items cannot exceed range of remaining weight.

**Format:** The input must be in any number format.

**Required:** The input is required.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **calcWeightRemaining Test Matrix** | | | | | | | | | | | | | |  |
|  | Test Cases | | | | | | | | | | | | |
| Valid | Invalid | | | | | | Boundary | | | | | |
| 1 | 2 | 3 | | 4 | | | 5 | 6 | | | 7 | |
| **Inputs** | | | | | | | | | | | | | |
| Item.Weight | 3 | -1 | | 2 | | 6 | | 0 | 3 | | 9 | | |
| Item.Quantity | 8 | 4 | | -1 | | 4 | | 5 | 1 | | 6 | | |
| weightRemaining | 40 | 30 | | 1 | | -1 | | 2 | 5 | | 0 | | |
| **Outputs** | | | | | | | | | | | | | |
| returnValue | 16 | -1 | | -2 | | | -3 | 2 | | 2 | | | -3 |
| **Error** |  | Weight is Negative | | Quantity is Negative | | | remaining is Empty |  | |  | | | remaining is Empty |

**Pseudo Code for** **double calcWeightRemaining(weightRemaining, item)**

Begin

If (item.weight < 0) //item.quantity can’t be 0, this tests for invalid inputs

Return -1

If (item.quantity < 1)

Return -2

If (item.weight \* item.quantity > weightRemaining)

addQuantity = math.trim(weightRemaining/item.weight)// # of Quantity to add to inventory

If (addQuantity = 0)

Return -3

Item.quantity = addQuantity

Return weightRemaining - (item.weight \* addQuantity)

Else

Return weightRemaining - (item.weight \* item.quantity)

End

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Cases** | | | | | | | |
| **Variables** | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| weightRemaining | 30 | 50 | 40 | 60 | 10 | 55 | 0 |
| itemWeight | 10 | -1 | 3 | 5 | 1.5 | 4 | 4 |
| itemQuantity | 3 | 20 | 25 | -5 | 20 | 21 | 5 |
| addQuantity | 2 | 0 | 13 | 0 | 6 | 13 | 0 |
| **Output** | | | | | | | |
| returnValue | 0 | -1 | 1 | -2 | 1 | 3 | -3 |