Answers to Questions from TT 7.2

Name: Dylan Rodwell
Student ID: 105341089

Hand execution using a trace table

Demonstrate how the following code is executed in the computer.

```ruby
1  def whatshouldthisfunctionbecalled?(data, val)
2      i = 0
3      result = false
4      while i < data.length
5          if data[i] == val
6              result = true
7              return result
8          end
9          i = i + 1
10     end
11     return result
12 end
```

Complete a trace table (using the answer sheet) for the following two arrays and parameter values:

Data	Val	Result
[2, 6, -4, 3, 7]	3	
[-2, 8, 2, -5, 9]	6	

1. Trace tables:

For data set: [2, 6, -4, 3, 7]

Val= 3

i	Data[i]	Result
0	2	False
1	6	False
2	-4	False
3	3	True

Return result breaks loop early and returns true

Final Result = true

For data set [-2, 8, 2, -5, 9]

Val = 6

i	Data[i]	Result
0	-2	False
1	8	False
2	2	False
3	-5	False
4	9	False

Return result does not break the loop early and returns false

Final Result = false

2. Results Answer

Data	Val	Result
[2, 6, -4, 3, 7]	3	True
[-2, 8, 2, -5, 9]	6	False

3. Name the function
I would call this function "find_val"

4. Improve the code
To improve this code of this function down to 6 lines of code, you can use the array.includes?() method to scan the array for a value and the method finds the value, it will return true, if it doesn't it will return false.

```ruby
1   def main()
2     data = [-2, 8, 2, -5, 9]
3     val = 6
4     result = data.include?(val)
5     puts result.to_s
6   end
7
8   main()
```