

## Answers to Questions from TT1.2

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### 1. Desk Check Task: Calculate Bill Total

Required Variables:

*Integer: appetizer\_price, main\_price, dessert\_price*

*Real (floating point): total\_price*

Pseudocode:

*Read the value of appetizer\_price (in cents)*

*Read the value of main\_price (in cents)*

*Read the value of dessert\_price (in cents)*

*total\_price = appetizer\_price + main\_price + dessert\_price*

*total\_price = total\_price / 100 #Comment: convert to dollars*

*Print '\$' then the value of total\_price to the terminal showing two decimal places.*

Test Data:

	First data set	Second data set
<i>appetizer_price</i>	1030	1240
<i>main_price</i>	3400	4100
<i>dessert_price</i>	850	980

Expected Result:

	First data set	Second data set
<i>Output:</i>	\$52.80	\$63.20

Desk check:

	Statement	<i>appetizer _price</i>	<i>main _price</i>	<i>dessert _price</i>	<i>total _price</i>	<i>output</i>
<i>First Pass</i>	<i>Read the value of appetizer_price</i>	1030				
	<i>Read the value of main_price</i>		3400			
	<i>Read the value of dessert_price</i>			850		
	<i>Calculate the total_price</i>				5280	
	<i>Convert to dollars</i>					52.80
	<i>Output the total_price</i>					\$52.80
<i>Second Pass</i>	<i>Read the value of appetizer_price</i>	1240				
	<i>Read the value of main_price</i>		4100			
	<i>Read the value of dessert_price</i>			980		
	<i>Calculate the total_price</i>				6320	
	<i>Convert to dollars</i>					63.20
	<i>Output the total_price</i>					\$63.20

## 2. Short Answer Questions:

**Focus in the following on using the correct computing terminology.**

Here are some terms that may help you: Assignment, evaluate, increment,

1. Using a few sentences explain why it may be important to execute statements in the correct sequence. (eg: what might happen if the last statement in Program 2 was executed earlier)

If the last statement in program 2 (`printf("$%.2f\n", total_price)`) was executed earlier then the `total_price` would be incorrectly evaluated

2: The code `main_price = 10` is an example of which kind of programming statement?

This is an assignment statement.

3: What **actions** does the computer perform when it executes `a = a + b`?

The computer first reads the value for a and the value for b  
Then it will calculate the sum of values a and b. It will then assign said sum to a

4: How would the value of variable i change in the statement `i = i + 1`?

The value of i will be read by the computer then increased by a value of 1 and then assign the new value to i

5: *What sort of types will Ruby use to store the following variables (given the associated variable values)?*

Data	Type
A person's name e.g: "Fred Smith"	String
Number of students in a class e.g: 23	Integer
Average age of a group of people e.g: 23.5	Float
A temperature in Celsius e.g: 45.7	Float
True or false e.g: 1 == 2	Boolean

Note: possible types include: Integer, String, Float, Boolean

6: *Variables have a scope – what are two different scopes variables can have in Ruby?*

Global Variables; Begin with a Dollar Sign '\$'. Global Variables are accessible everywhere, regardless of where they are declared.

Local Variables; Begin with a lowercase letter or an underscore. Local Variables can only be accessed within the code construct which they have been declared in.

*For help with Question 6 you could also see:*

[https://www.tutorialspoint.com/ruby/ruby\\_variables.htm](https://www.tutorialspoint.com/ruby/ruby_variables.htm)