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1.a)

i) Output was given for System.out.println(“32-14”); was 32-14

ii) Output was given for System.out.println(32-14) was 18

iii) Different between two lines:

For the first one with the quotation marks, the system will read it as a string and all it can do is print out everything that is inside the quotation mark (print out the string)

For the one without quotation marks, the system will read it as a variable. With that being said, it will do the math for 32 minus 14 and print out the answer which is 18.

1.b)

i) The out put was:

Testing arithmetic and output

14

32

32-14

18

Testing more arithmetic and output

14 \* 32 =

448

14.0 \* 32.0 = 448.0

14 \* 32 =448448.0

14 \* 32 = 448 or 448.0

BUILD SUCCESSFUL (total time: 0 seconds)

ii) The two last numbers (‘448’ & ‘448.0’) are printed differently because the input for number 448 is 14\*32 without the .0 at the end and the input for number 448.0 is 14.0\*32.0 with the .0 at the end

iii) **)** In the output line ‘14 \* 32 =448448.0’, **),** the final output number is 448448.0 because the output of 3 lines:

System.out.print("14 \* 32 =");

System.out.print(14 \* 32);

System.out.println(14.0 \* 32.0);

Appear on a same line on the output page.

iv) The different between the two line is: the line System.out.print(14 \* 32); creating an output in a new line and the line System.out.print(14 \* 32); is creating an output on the same line with previous output. v) In the statement: System.out.println("14 \* 32 = " + (14 \* 32) + " or "+ (14.0 \* 32.0)); what do the plus signs (‘+’) seem to be doing? (4 pts) The plus signs (‘+’) seem to be combining the strings “14 \* 32 =”, ”or” and the variables (14 \* 32), (14.0 \* 32.0) together.

2.a) Please see the file Lab1Part2sceenshot for this question

Printing variable values

Num1 = 72

Num2 = 9

Product of num1 & num2 = 648

Quotient of num1 & num2 = 8

Num1 = 72 Num2 = 9

Num1 = 45 Num2 = 9 Num3 = 9.0

New value of num1 [num1 = num1 - (num2 \* 3)] is 45

Value of num3 [num3 = num3 / 3 + (num1/num3)/2] is 5.5

Final value of num2 [num2 = num2 / 3 + (num1/num2)/2] = 5

Addition sign between num1 and num2 (version 1) 455

Addition sign between num1 and num2 (version 2) 50

Addition sign between num1 and num3 (version 3) 50.5

Addition sign between num1 and num3 (version 4) 455.5

BUILD SUCCESSFUL (total time: 0 seconds)

2.b) Name of the operation “=” is simple assignment operator

2.c) On the second to the last line of output from the part of the println command that has ‘ + (num1 + num3)’ the printed is : Addition sign between num1 and num3 (version 3) 50.5

2.d) On the last line of output from’ + num1 + num3’ the printed is: Addition sign between num1 and num3 (version 4) 455.5

2.e) The causes these two outputs to be different is on the second to the last line has the parentheses ‘ + (num1 + num3)’ , so the output will be the addition of num1 and num3. On the last line without the parentheses ‘ + num1 + num3’ , the output will be 2 variables ( num1 and num3 ) are put next to each other.

2.f) The “System.out.println” print out displays the result and then throws the cursor to the next line.

2.g) There is 3 variables are declared in this program, names of the variables and give the data types of the variables : num1 and num2 are integers, num3 is double variables

2.h) There are two different things in this program that cause a blank line to be printed.

The line System.out.println(); and System.out.println("Final value of num2 [num2 = num2 / 3 + (num1/num2)/2] = "+num2 + "\n");

2.i) **num3 = num3 / 3 + (num1/num3) / 2; // statement 1**

| | | |

• | | (num1/num3) is 45/9.0 which gives 5.0 [STEP 1]

| | |

• | num3 / 3 is 9.0/3 which gives 3.0

| |

• | (nume1/num3) / 2 is 5.0/2 which gives 2.5

|

• num3/3 + (num1/num3) is 3.0 + 2.5 which gives 5.5

**num2 = num2 / 3 + (num1/num2)/2; // statement 2**

| | | |

• | | (num1/num2) is 45/9 which gives 5

| | |

• | num3 / 3 is 9/3 which gives 3

| |

• | (num1/num2) /2 is 5/2 which gives 2

|

• num2 / 3 + ( num1/num2) /2 is 3 + 2 which gives 5

3.a)

Dimensions of the rectangular prism are 3 by 5 by 4

Exception in thread "main" java.lang.RuntimeException: Uncompilable source code - cannot find symbol

The areas of the three different sized faces of the prism are 15 and 12 and 20

symbol: variable surfaceArea

location: class lab1part3.Lab1Part3

at lab1part3.Lab1Part3.main(Lab1Part3.java:35)

/Users/maitu/Library/Caches/NetBeans/8.2/executor-snippets/run.xml:53: Java returned: 1

BUILD FAILED (total time: 2 seconds)

3.b) The line with error number is 35

3.c) Error listed is

Cannot find symbol

Symbol: variable surfaceArea

Location: class Lab1Part3

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(Alt-Enter shows hints)

3.d) Please see Lab1Part3.java for this question

3.e) The error was created because ‘surfaceArea’ was not assigned before but pulled out to be use that makes the system cannot find that variables

4.a)

- Out put for a = 4, b = 4, c = 1

Please enter a number 4

Please enter another number 4

Please enter a third number 10

Dimensions of the rectangular prism are 4 by 4 by 10

The areas of the three different sized faces of the prism are 16 and 40 and 40

The equation for the surface area of the rectangular prism is 2 \* 16 + 2 \* 40 + 2 \* 40

The surface area of the rectangular prism is 192

BUILD SUCCESSFUL (total time: 27 seconds)

-Out put for a = 6, b =2, c =3 was

Please enter a number 6

Please enter another number 2

Please enter a third number 3

Dimensions of the rectangular prism are 6 by 2 by 3

The areas of the three different sized faces of the prism are 12 and 18 and 6

The equation for the surface area of the rectangular prism is 2 \* 12 + 2 \* 18 + 2 \* 6

The surface area of the rectangular prism is 72

BUILD SUCCESSFUL (total time: 4 seconds)

-Output for a=1, b=4, c=4 was:

Please enter a number 1

Please enter another number 4

Please enter a third number 4

Dimensions of the rectangular prism are 1 by 4 by 4

The areas of the three different sized faces of the prism are 4 and 4 and 16

The equation for the surface area of the rectangular prism is 2 \* 4 + 2 \* 4 + 2 \* 16

The surface area of the rectangular prism is 48

BUILD SUCCESSFUL (total time: 5 seconds)

Please see Lab1Part4aSceenshot (3 of those)

4.b) Please see Lab1Part4bSceenshot

4.c) The Scanner in this case let you to enter integer numbers. Otherwise it allows the user to read values of various types.

4.d) The line System.out.print("Please enter a number "); before the first call to the scanner because it needs to be called out first to let the user know that they need to enter something like variables or strings in order to run the code.

5.a) Please see Lab1Part5.java for this answer

5.b) If you put quotient = b/a; the system will show errors because both a and b are integers but quotient is a float number. The value is put in quotient is 2. The value is not accurate because quotient is a float but was assign with the division of two integers which lead quotient show up as an integer, all the decimals is cleared out, the answer won’t be accurate.

5.c) quotient = (float)g/(float)f

5.f) One more example is when f = 0, the division cannot be solve which lead to error