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**CSE 1310-005**

**Lab 2**

**Answers for Part 1**

**1.a)** Below is the output once the program is executed

Printing values

int item1 value = 5

int item2 value = 6

double num1 value = 3.0

double num2 value = 24.0

orig item2/item1 6/5 = item2 = 1

resetting item2 value = 15

item2/num1 15/3.0 = num2 = 5.0

item1 \* num1/2 8\*3.0/2 = num2 = 12.0

int item2 value = 15

double num1 value = 3.0

after item2 = (item2-1) / 3: item2 value = 4

after num1 \*= item2 + 2.1: num1 value = 18.299999999999997

num1 < item1 is false

num2 != item2 is true

Printing values

int item1 value = 8

int item2 value = 4

double num1 value = 18.299999999999997

double num2 value = 12.0

**1.c)** Three examples of shortcut arithmetic operators that are NOT used in the program are:

/= Division

+= Addition

-= Subtraction

**Answers for Part 2**

**2.b)** Two possible outputs produced by the program are:

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**2.c)** What is different about the dash and comma variables? How are they like and different from Strings?

They are char variables. They are like strings in the fact that they can read any character from the keyboard. They are different from strings in the fact that they can only read one character and usually only take up on byte of memory.

**Answers for Part 3**

**3.a)** List each different type of error

Possible lossy conversion from double to int

Illegal start of expression

Variable x3 and y3 not used

**3.b)** Why does each error occur?

The possible lossy conversion from double to int error occurs because the integer variable base is determined by subtraction of two doubles. When the double demotes to a int it will lose data.

The illegal start of expression error occurs because there is no data type before the circumference variable when it first appears in the code. The circumference variable is never declared.

The x3 variable and the y3 variable are never used in this program.

**3.d)** The output is:

The base is length 3 and the height is 4

The distance between (4.0,1.0) and (1, 5) is 5.0

the area of the right triangle is 6.0

The circumference of the right triangle is 12.0

**Answers for Part 5**

**5.b)**

**1)**

Please enter the Height of the box in Feet: 3.2

Please enter the Width of the box in Feet: 4

Please enter the Depth of the box in Feet: 1.2

Please enter the Weight of the box in Kilograms: 9.8

Units Height Width Depth Volume

Inches 38.4 48.0 14.4 26542.1

Feet 3.20 4.00 1.20 15.36

Weight in Pounds Kilograms Kg per In

21.5600 9.8000 0.0004

**2)**

Please enter the Height of the box in Feet: 2.7

Please enter the Width of the box in Feet: 1.9

Please enter the Depth of the box in Feet: 3.1

Please enter the Weight of the box in Kilograms: 2.2

Units Height Width Depth Volume

Inches 32.4 22.8 37.2 27480.4

Feet 2.70 1.90 3.10 15.90

Weight in Pounds Kilograms Kg per In

4.8400 2.2000 0.0001