1.a)

Please see file Lab2Part1a.java for this question.

1.b)

As a CpE major, you should graduate in Spr. semester, May 2021.

As a SE major, you should graduate in Spr. semester, May 2022.

1.c)

comma and dot here are literals and primitives. Java use autoboxing. So any primitives are automatically wrapped in objects when required. Also, whenever we use any type of datatype in a string, they are automatically casted to string.

1.d)

Please see file Lab2Part1d.java for this question.

2)

Please see file Lab2Part2.java for this question.

2.a)

Initial values are:

Integer ival1 = 5

Integer ival2 = 12

Floating point fval1 = 3.0

Floating point fval2 = 60.00

orig ival2/ival1 = 12/5 = 2

orig ival2/(double)ival1 = 12/5.0 = 2.4

ival2/fval1 = 12/3.0 = fval2 = 4.0

ival2 % (int) fval1 12%3 = 1val1 = 0

after ival2++: ival2 value = 13

after fval1 += ival2: fval1 value = 16.0

ival1 = 0 & ival2 = 13

fval1 = 16.0 & fval2 = 4.00

fval1 >= ival1 is true

fval2 != ival2 is true

BUILD SUCCESSFUL (total time: 0 seconds)

2.b)

The += is an abbreviation for adding the right variables to the left and storing the result in the left variable.

Eg. a+=b is same as a=a+b

2.c)

It is same as

fval1 = fval1 + ival2;

3)

Please see file Lab2Part3.java for this question.

3.a)

int base = Math.abs(x1 – x2); // incompatible types: possible lossy conversion from double to int

int height = Math.abs(y1 - y2); // incompatible types: possible lossy conversion from double to int

area =; // illegal start of expression

double perimeter = ; // illegal start of expression

3.b)

Error : // incompatible types: possible lossy conversion from double to int

It is occuring because Math.abs() methos returns a double value and we are trying to pass this double value to an int which is only possible if we manually cast this double to int.

Error : // illegal start of expression

It is occuring because we have not provided an value to area and perimeter after '='.

'=' always need a value/variable on its right side otherwise this error will occur.

3.c)

Please see file Lab2Part3.java for this question.

3.d)

The base is length 6 and the height is 8

The distance between (8.0,2.0) and(2,10) is the hypotenuse: 10.0

The vertices of the triangle are : (8.0,2.0), (2.0,10.0), and (2.0,2.0)

The area of the right triangle is 24.0

The perimeter of the right triangle is 24.0

BUILD SUCCESSFUL (total time: 0 seconds)

3.e)

System.out.println("The lengths of the sides of the triangle are "+base+", "+height+", and "+hypotenuse);