## King Fahd University of Petroleum \& Minerals Information and Computer Science Department ICS 103: Computer Programming in C (2-3-3) [Term 092] <br> Homework Assignment \#1 [Due Friday March 19 before midnight]

> Instructions

- Create one file in word named hw1_yourID.doc where yourID is replaced by your student ID. This file should have the solution for all questions except the programming one.
- Create one program file named hw1_q5.c (the files you save from Dev++ or turbo compiler)
- Zip the 2 files in one file named hw1_yourID.zip and upload it in WebCT.


## - No group work is allowed. The homework solution has to be your own work. Any cheating will lead to severe consequences.

## Question 1: (2 points)

Show the output of the following program in the space provided below
it. Each square corresponds to one space
\#include <stdio.h>
int main(void) \{
int $x=-725$;
double $y=16.479$;
printf ("\%5d\%8.2f\%f\n", x, Y,y);
printf("\%11.4f\%d\%6.1f\n",y,x,y);
return 0;
\}

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
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Question 2 : (2 points): Evaluate the following expressions by hand:

| expression | Value |
| :--- | :--- |
| $1.5+13.5 / 3-3 \% 4 / 6.0$ |  |
| $1689 \% 500 \% 50 \% 4$ |  |
| $-2+3 *-7 / 2+5 / 3 * 3$ |  |

Question 3: (2 points): Write the following expressions in C language

| Mathematical <br> Expression | C Expression |
| :--- | :--- |
| $\frac{x^{\sqrt{y}}-z^{2}}{x+y}$ |  |
| $\sqrt{\sqrt{x}+y}$ |  |
| $1+\frac{x^{\|y\|+x}}{y}-\sqrt{z}$ |  |

## Question 4: (1 points)

What will be the values of $x, y$, and $z$ after executing the following statements.
int $x=7.999$;
double $y=x$;
double $z=9 / 2$;


## Question 5 (3 points):

Write a program that prompts the user to enter the radius of a circle. The program displays the area and circumference of the circle. It also finds and displays the side of a square having the same area as the circle whose radius is entered by the user.
A sample run of your program is shown below.
The way to display the output must match the sample run.
Note: Define $\pi$ as a constant with a value of 3.14159
All output values are displayed with 3 digits after decimal point.


