

MTH 307/417/515: Programming and Data Structures

Homework I

(Due 17/01)

1. What output does the the following `printf` statements produce?
 - (a) `printf("%6d,%4d",86,1040);`
 - (b) `printf("%.4f",83.162);`
 - (c) `printf("%-6.2f",.0000009979);`
2. Determine whether each of the following pairs of `scanf` format strings are equivalent.
 - (a) `"%d"; " %d "`;
 - (b) `"%f,%f"; "%f, %f";`
 - (c) `"%-d-%d-%d"; "%d -%d -%d";`
3. Determine the values assigned to the variables after the `scanf` call with the associated input.
 - (a)

```
int i,j;
float x;
scanf("%d%f%d",&i,&x,&j); Input:  10.3 5 6
```
 - (b)

```
int i;
float x,y;
scanf("%f%d%f",&i,&x,&j); Input:  12.3 45.6 789
```
4. Write a C program for each of the following tasks, without declaring additional functions.
 - (a) Accepting data from the user in the form mm/dd/yyyy and then displaying in the form yyymmdd.
 - (b) Prompting the user to enter a telephone number in the form (xxx)xxx-xxxx, and then displaying the number in the form xxx.xxx.xxxx.
 - (c) Accepts two fractions (separated by a - sign) at the same time and then computing and displaying their difference, product, and quotient. (Try to minimize the number of conditional statements used.)
 - (d) Computing the GCD and LCM of any two positive integers.
 - (e) Rounding a floating-point number to the desired number of decimal places.