CS 36
Lab 1

Sample Program:

For all your C Programs that you submit for grading including homework and exams when required must follow this form.

```
/*************************************************************************************/
/*                                                                                   */
/*        This is where your put your name, student ID, date,                        */
/*        version, and, the description of what you program                          */
/*        is to accomplish.  Example:                                                */
/*                                                                                   */
/*        Name: John Doe                                                             */
/*        Student ID: 12345                                                          */
/*        Date: Jan 16, 2018                                                         */
/*                                                                                   */
/*        Homework 1                                                                 */
/*        Program Set 1                                                              */
/*                                                                                   */
/*        This program calculate the sum of two numbers                              */
/*                                                                                   */
/*************************************************************************************/

#include<stdio.h>

int main()
{
     int x, y, sum;
     x = 5;
     y = 6;
     sum = x + y;
     printf("x = %d      y = %d      sum  = %d\n", x, y, sum);
     return 0;
}
```

Notes:

Data Type

DATA TYPE	SIZE IN BYTES	RANGE
char	1	-128 to 127
unsigned char	1	0 to 255
signed char	1	-128 to 127
int	2	-32768 to 32767
unsigned int	2	0 to 65535
signed short int	2	-32768 to 32767
signed int	2	-32768 to 32767

short int	2	-32768 to 32767
unsigned short int	2	0 to 65535
long int	4	-2147483648 to 2147483647
unsigned long int	4	0 to 4294967295
signed long int	4	-2147483648 to 2147483647
float	4	3.4E-38 to 3.4E+38
double	8	1.7E-308 to 1.7E+308
long double	10	3.4E-4932 to 1.1E+4932

Order of Preference

Operator(s)	Operation(s)	Order of evaluation (precedence)
( )	Parentheses	Evaluated first. If the parentheses are nested, the expression in the *innermost* pair is evaluated first. If there are several pairs of parentheses "on the same level" (i.e., not nested), they're evaluated left to right.
*	Multiplication	Evaluated second. If there are several, they're evaluated left to right.
/	Division	
%	Remainder	
+	Addition	Evaluated third. If there are several, they're evaluated left to right.
-	Subtraction	
=	Assignment	Evaluated last.

Fig. 2.10 | Precedence of arithmetic operators.

C Keywords

Keywords			
auto	double	int	struct
break	else	long	switch
case	enum	register	typedef
char	extern	return	union
const	float	short	unsigned
continue	for	signed	void
default	goto	sizeof	volatile
do	if	static	while
Keywords added in C99 standard			
_Bool	_Complex	_Imaginary	inline restrict
Keywords added in C11 draft standard			
_Alignas	_Alignof	_Atomic	_Generic _Noreturn _Static_assert _Thread_local

Fig. 2.15 | C's keywords.

Question 1

Identify and correct the errors in each of the following statements. (*Note:* There may be more than one error per statement.)

a) scanf("d", value);

b) printf("The product of %d and %d is %d"\n, x, y);

c) firstNumber + secondNumber = sumOfNumbers

d) if (number => largest)
largest == number;

e) */ Program to determine the largest of three integers /*

f) scanf("%d", anInteger);

g) printf("Remainder of %d divided by %d is\n", x, y, x % y);

h) if (x = y);
printf(%d is equal to %d\n", x, y);

i) print("The sum is %d\n," x + y);

j) printf("The value you entered is: %d\n, &value);

Question 2

Write a program that asks the user to enter two numbers, obtains the two numbers from the user and prints the sum, product, difference, quotient and remainder of the two numbers.

Output:

Enter two numbers: 20 5
The sum is 25
The product is 100
The difference is 15
The quotient is 4
The remainder is 0

Question 3

Write a program that inputs one five-digit number, separates the number into its individual digits and prints the digits separated from one another by three spaces each. [*Hint:* Use combinations of integer division and the remainder operation.] For example, if the user types in 42139, the program should print.

Output
4 2 1 3 9