**Statements in BASIC Language**

**Part One**

1. **REM** Statement :

Usage : used to add **remark** or comments in the program .

Form : NO. of statement space **REM** space the comment

 **10 REM THIS PROGRAM USED TO SOLVE EQUATIONS**

1. **LET** Statement :

**Usage** : used to give value for a variable .

**Form** : NO. of statement space **LET** space Variable=Mathematical Expression

 **20 LET A=X+5**

**Or**  **20 LET B=X+2Y\*(Z-3)**

**Note :** This statement is arbitrary and can be eliminated from program and write the mathematical expression directly.

 **20 A=X+5**

**Or**  **20 B=X+2Y\*(Z-3)**

1. **READ – DATA** statement :

**Usage** : used to read the data of the corresponding variables.

**Form :** NO. of statement space **READ** space variable**1**, variable**2**, variable**3**,.

NO. of statement space **DATA** space data**1**, data **2**, data **3**,.

**Rules** for **READ – DATA** statement:

* The variables in read statement must correspond the data in data statement (if the variables are numerical type the data must numerical and if the variables are string the data must string).
* Data statement may be put it in any location the program read statement and before end statement.
* The string data that contain comma must put it between double quote (**“**ahmed**,**1990**”**)
* The numbers of data in data statement may be greater than the numbers of variables in read statement and this is not affect on the program but the opposite cause error.
* Can written more than one read or data statement in the same program.

Examples :

10 READ X,Y,Z 10 READ X, **A$**,Y,**B$**

. .

. .

40 DATA 10,15,20 40 DATA 10**,”AHMED”,**15,**”ALI”**

**4- RESTORE** statement :

**Usage** : used to re-read the data in the data statement for the read statement below it.

**Form : 1-** NO. of statement space **RESTORE**

 **2-** NO. of statement space **RESTORE** space NO. of data statement

Example1 : write a program to print the value of x ,y

10 READ A 10 READ A,B

20 DATA 5 20 DATA 5

30 X=A+2 30 X=A+2

40 READ B **40 RESTORE**

50 DATA 12 **50 DATA 12**

60 Y=B\*4 60 Y=B\*4

70 PRINT X,Y 70 PRINT X,Y

80 END 80 END

Example2 : write a program to print the value of x ,y

10 READ A,B,C,X,Y

20 DATA 2,4,8

**30 RESTORE**

40 S=A+B+C

50 Z=X\*Y

60 PRINT S,Z

70 DATA 10,20

80 END

The value of x and y are 10,20 respectively.

5- **INPUT** statement :

**Usage** : used to input the data for variables during the running of program by the key board.

**Form :** NO. of statement space INPUT space variables separated by comma

Example :

10 INPUT A,B,C 10 INPUT A$

20 Y=A+B+C 20 PRINT A$

30 PRINT Y 30 END

40 END RUN

RUN ?AHMED

?5,10,15 AHMED

30

6- **PRINT** statement :

**Usage** : used to print the data of variables .

**Form :** NO. of statement space PRINT space variables separated by comma

Example :

10 READ X,Y

20 Z=X\*Y

30 PRINT Z

40 DATA 2,5

50 END

RUN

10

Examples: for use( , and ;) comma and point comma.

* **In the output screen there is fields and columns and usually each field contains (8 or 14 or 16) columns depending on the type of computer.**

7- **LPRINT** statement :

**Usage** : used to print the data of variables on printer .

**Form :** NO. of statement space LPRINT space variables separated by comma

Example : write a program to print the square root of a number

10 READ A

20 X= SQR(A)

30 LPRINT X

40 DATA 25

50 END

RUN

5

* The function **TAB** and **SPC** used with the print statement determine the location of output on the screen.

Example :

10 READ A,B 10 READ A,B

20 S=A+B 20 S=A+B

30 PRINT A;TAB(10);B;TAB(40);S 30 PRINT A;SPC(10);B;SPC(40);S

40 DATA 5,20,25 40 DATA 5,20,25

50 END 50 END

RUN RUN

-5-------20--------------------25 5----------10---------------------------------------25

Column no.10

Column no.40

10 spaces

40 spaces

8- **END** statement :

**Usage** : used to ending the program .

**Form :** NO. of statement space END

This statement usually written at the end of program and refers to the ending of the program . when written at any location other than end it work as STOP (temporary stopping) and when we need to continue the run of program must write the order CONT .

Example :

10 READ A

20 X= SQR(A)

30 LPRINT X

40 DATA 25

50 END

RUN

5

**Examples for the applying the above statements :**

Ex1: write a program to find the square root of a number and then print the number and its square root.

EX2: write a program to find the cubic root of a number and then print the number and its cubic root.

EX3: write a program to find the area and circumference of circle and print the data and results with details.

EX4: write a program to find the value of sin(x) if x=30from the sequence : for four parameters.

Sin(x)= x-x^3/3!+ x-x^5/5!+ x-x^7/7! + x-x^9/9!+ x-x^11/11!