



Distance Learning and Education Services
Tel: 0748 464463, 0744 275160, Dar es Salaam

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CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

COMPUTER STUDIES 2- PRACTICAL (FORM IV) NOV 2001
(For Both School and Private Candidates)

Answers prepared by Paul Komba and moderated by Omar Mzee

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(For both School and Private Candidate)
Time 3 Hours .

- You are given sets of numbers as follows:
 - 18.1, 19.2, 16.0, 12.8, 14.3, 20.9, 16.1, 11.9
 - 100.3, 86.9, 143.8, 99.2, 109.6, 111.1, 97.0, 115.1, 121.9, 109.2, 109.2, 88.4, 89.1, 93.6, 108.2
 - 3.2, -0.5, 1.2, 0, 1.4, 1.5, 2.4, -1.5, 2.2, -2.1, -1.3.

Implement a program, which will calculate the sum and the average of each group. Hence give the sum and average of each group.

- Students in a school are examined in physics, chemistry, mathematics and English. Prepare a program, which will show the names of students and their scores in a tabular form and create a merit list. The program should include a condition for eliminating from the list any student who scores below 35 in English.

- given that for any triangle

$$\text{Area} = \frac{AB \sin \theta}{2}$$

and the length of the third side is
 $C = (A^2 + B^2 - 2AB \cos \theta)^{1/2}$

Implement a triangle that will calculate the area and length of the third side of a triangle.

Calculate the values if A, B and θ have the values, 1, 2 and 30° respectively.

SOLUTIONS SCHEME

Problem definition to calculate sum and average of numbers in a given group

Output: Sum, average

Input: numbers

Process: adding all numbers and dividing by the total number of items

Algorithm

Start
Read the number
Calculate sum, average
Display sum, average
End

```
5   CLS
10  DIM A(8),B(15),C(11)
20  REM TO CALCULATE SUM AND
    AVERAGE FOR GROUP A
30  sum = 0
40  FOR i = 1 TO 8
50  READ a (i)
60  sum = sum + a(i)
70  NEXT i
80  DATA 18.1,19.2,16.0,12.8,14.3,20.9,16.1,11.9
90  avg = sum/8
100 Print "Sum =",sum, "Average =" avg
```

```

110 REM SUM AND AVERAGE FOR GROUP
B
120 sum = 0
130 FOR i = 1 + 15
140 READ b(i)
150 sum = sum +b(i)
160 NEXT i
170 DATA
100.3,86.9,143.8,99.2,109.6,111.1,97.0,115.,121.9,10
9.2,88.4,89.1,93.6,108.2
180 avg =sum/15
190 print "sum =" sum, "average = "; avg
200 REM SUM AND AVERAGE FOR GROUP
C
210 sum = 0
220 FOR i = 1 TO 112
230 READ c(i)
240 sum = sum + c(i)
250 NEXT i
260 DATA -3.2,-0.5,1.2,0,1.4,1.5,2.4,-1.5,2.2,-2.1,-
1.3
270 avg = sum/11
280 print "sum ="; sum, "average = "; avg
290 END

```

2.Students in a school are examined in Physics, Chemistry, Mathematics and English. Prepare a program which will show the names of students and their scores in tubular form and create a merit list .The program should include a condition for eliminating from the list any student who scores below 35 in English.

Problem definition .To create merit list and students scores in tabular form

Output: Students' names and their scores
 Input: Students' names and Marks in each subject
 Process: testing if a mark in English is below 35 and removing the name from the merit list

Algorithm:
 Start
 Enter students names, marks
 Testing if a score is below 35 in English
 Display the merit List
 End.

```

PROGRAM
Cls
Rem program to create merit list
Input " How many students set for the exam?";S
For i = 1 to S
Input "name";n$(i)
Input "mark in Physics";p(i)
Input "mark in Chemistry"; c(i)

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Input "Mark in Mathematics"; m(i)
Input "Mark in English"; e(i)
Next i
Print
Print "MERIT LIST"
Print " Students names" "Physics"; "Chemistry"
"Mathematics"; "English"
For i = 1 to S
If e(i) < 35 then 10 else go to 5
5 print n$(i),p(i),C(i),m(i),e(i)
10 Next i
END

```

3.Given that for any triangle

$$Area = \frac{AB \sin \theta}{2}$$

and the length of the third side is

$$c = (A^2+B^2 -2AB \cos\theta)^{1/2}$$

Implement a program that will calculate the area and length of the third side of a triangle

Calculate the values if A,B and θ have the values 1,2 and 30° respectively.

Problem definition. To calculate the are and length of the third side of a triangle.

Output: area, length of the third side

Input: length of side Aside B and angle θ

Process : $Area = \frac{(A * B \sin \theta)}{2}$ $C = \text{SQR}(A^2+b2$

$-2*A*B \cos \theta)$

Algorithm

Start

Enter values of A,B, θ

Calculate area and length of C

Display area and Length C

END

PROGRAM

Cls

REM basic program to calculate area and length of the third side of a triangle.

Read A,B ,t

Rem change angles in degrees to its equivalent in radians

Let $K = \frac{(3.14159 * t)}{180}$

$Area = \frac{(A * B * \sin(k))}{2}$

$C = \text{SQR}(A^2 + B^2 - 2*A*B*\cos(k))$

Print " area = "; Area, " third side" ; C

Data 1,2,30

END