

Assignment #5

1. Write a FORTRAN program to read the coordinate of three points (X1, Y1), (X2, Y2), (X3, Y3), and compute distance DIST12 between points 1 and 2, distance DIST1 and 3, and distance between 2 and 3 by using statement function to calculate the distance between two points as following formula

$$DISTANCE = \sqrt{(XA - XB)^2 + (YA - YB)^2}$$

2. Write a FORTRAN main program which calculates and prints the volume of a container with a triangle base, given that:

$$VOLUME = AREA * HEIGHT$$

Let the value of AREA be calculated from a function subprogram named AREA. The area of triangle is calculated from the following equation:

$$AREA = \sqrt{S(S - A)(S - B)(S - C)}$$

Where A, B, C are the sides of the triangle, and S is computed from : $S = \frac{A + B + C}{2}$

3. Write subroutine TEMP that converted the N number of temperature from Centigrade to Fahrenheit. by using this formula :

$$T_{Fahrenheit} = 32 + \frac{T_{centigrade} \times 9}{5}$$

Also the subroutine find the maximum of temperature. use this subroutine in the main program that reads N number of temperature in centigrade in one dimension array named TCEN, and then converted this temperature into Fahrenheit in one dimension array named TFEH. Print the result as following:

TEMPERATURE IN CENTIGRADE ARE

XXX.X,XXX.X,XXX.X ... XXX.X

MAXIMUM TEMPERATURE IS XXX.X IN CENTIGRADE

TEMPERATURE IN FAHRENHEIT ARE

XXX.X,XXX.X,XXX.X ... XXX.X

MAXIMUM TEMPERATURE IS XXX.X IN FAHRENHEIT