

ESC101: Fundamental of Computing

Lab 2: Tuesday

1. Write a C program to find whether two circles (x_1, y_1, r_1) and (x_2, y_2, r_2) intersect or not. Assume tangentially touching circles as intersecting. [20]

Test your programs for:

$(0,1,1)$ and $(1,0,1)$

$(-1,0,1)$ and $(1,0,1)$

$(0,0,1)$ and $(0,0,2)$

2. Write a C program to input two points $A(x_1, y_1)$ and $B(x_2, y_2)$ and a value k . Calculate and display the coordinates of the point $P(x, y)$ that divides the line segment AB in the ratio $1:k$. Your program should produce the following display: [20]

The x coordinate is _____

The y coordinate is _____

where the underlined spaces are to be replaced with the values calculated by your program.

3. Write a program to input time in seconds and print it in the form HH:MM:SS.

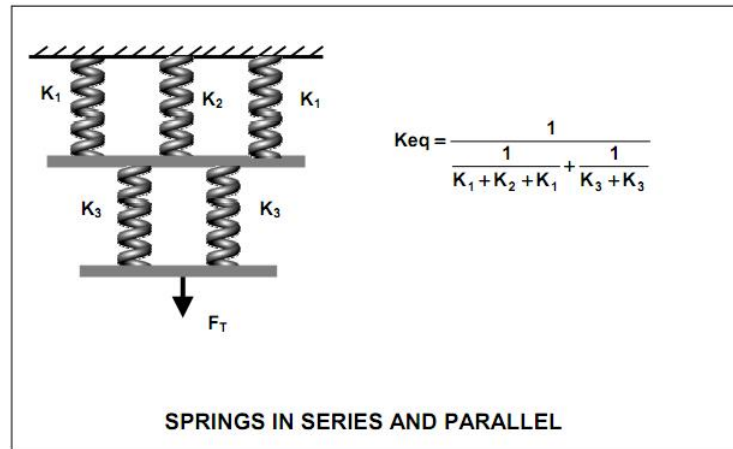
For eg:

Input: 7907

Output: 2:11:47

[20]

- 4.



For what value of x (the displacement from the mean position) will the total energy content in the system be 1000J. The values of spring constants is provided as input. Print your answers **correct to 3 decimal places**. [40]