

```

#include<stdio.h>
#include<conio.h>

float f(float);

void main()
{
    static float y[30],x[30];
    float ITC,a,b,h,sum,t;
    int n,i;

    clrscr();
    printf("*****THIS PROGRAM IMPLEMENTS TRAPEZOIDAL RULE*****\n\n");

    /* Taking inputs */
    printf("Enter the value of a = ");
    scanf("%f",&a);
    printf("Enter the value of b = ");
    scanf("%f",&b);
    printf("Enter the number of intervals = ");
    scanf("%d",&n);

    /* Calculate the data points */
    if(b>a)
        h = (b - a)/n;        //length of the interval
    else
    {
        h = (a-b)/n;
        t = a;
        a = b;
        b = t;
    }

    for(i=0;i<=n;i++)
    {
        x[i] = a + i*h;
        y[i] = f(x[i]);
    }

    /* Calculate ITC
    */
    sum = y[0] + y[n];
    for(i=1;i<n;++i) sum = sum + 2 * y[i];
    ITC = (h/2)*sum;

    /*print result */
    printf("\n\nThe integration value ITC = %f",ITC);
    getch();
}

```

```
float f(float x)
{
    return(4*x - 3*x*x);
}
```