On the first day of Christmas my true love gave to me
a partridge in a pear tree.

On the second day of Christmas my true love gave to me
two turtle doves
and a partridge in a pear tree.

On the third day of Christmas my true love gave to me
three french hens, two turtle doves
and a partridge in a pear tree.

On the fourth day of Christmas my true love gave to me
four calling birds, three french hens, two turtle doves
and a partridge in a pear tree.

On the fifth day of Christmas my true love gave to me
five gold rings;
four calling birds, three french hens, two turtle doves
and a partridge in a pear tree.

On the sixth day of Christmas my true love gave to me
six geese a-laying, five gold rings;
four calling birds, three french hens, two turtle doves
and a partridge in a pear tree.

On the seventh day of Christmas my true love gave to me
seven swans a-swimming, six geese a-laying, five gold rings;
four calling birds, three french hens, two turtle doves
and a partridge in a pear tree.

On the eighth day of Christmas my true love gave to me
eight maids a-milking, seven swans a-swimming,
six geese a-laying, five gold rings;
four calling birds, three french hens, two turtle doves
and a partridge in a pear tree.

On the ninth day of Christmas my true love gave to me
nine ladies dancing, eight maids a-milking, seven swans a-swimming,
six geese a-laying, five gold rings;
four calling birds, three french hens, two turtle doves
and a partridge in a pear tree.

On the tenth day of Christmas my true love gave to me
ten lords a-leaping,
nine ladies dancing, eight maids a-milking, seven swans a-swimming,
six geese a-laying, five gold rings;
four calling birds, three french hens, two turtle doves
and a partridge in a pear tree.

On the eleventh day of Christmas my true love gave to me
eleven pipers piping, ten lords a-leaping,
nine ladies dancing, eight maids a-milking, seven swans a-swimming,
six geese a-laying, five gold rings;
four calling birds, three french hens, two turtle doves
and a partridge in a pear tree.

On the twelfth day of Christmas my true love gave to me
twelve drummers drumming, eleven pipers piping, ten lords a-leaping,
nine ladies dancing, eight maids a-milking, seven swans a-swimming,
six geese a-laying, five gold rings;
four calling birds, three french hens, two turtle doves
and a partridge in a pear tree.

2)
FUNCTION F(X)
    REAL F, X
    F=4.0/(1.0+X*X)
    RETURN
END

INTEGER I
REAL  h, X
a=0.0
b=1.0
s1=0.0
s2=0.0
s3=0.0
WRITE(*,*) "Enter the number of partitions (Must be Even)"
READ(*,*) N
h = (b-a)/(2.0*N)
s1 = (F(a)+ F(b))
DO 10 I=1,2*N,2
    s2=s2+F(a+I*h)
10   CONTINUE
DO 20 I=1,2*N,2
    s3=s3+F(a+I*h)
20   CONTINUE
WRITE(*,*) (h/3.0)*(s1+ 4.0*s2 + 2.0*s3)
STOP
END

Enter the number of partitions (Must be Even)

4
3.39680052
3.a)  
#include <stdio.h>  
#include <math.h>  

double f(double t, double y)  
{return y;}

int main()  
{  
    double h=0.1, y, t,x;  
    int i;  
    y=1.0; t=0.0;  
    for (i=0; i<=10; i++)  
        {  
            printf("%lf %lf %lf\n", t, y, -x*x*y);  
            y= y+h*f(t,y);  
            t=t+h;  
        }  
    return 0;  
}

[rtt5188@omega rtt5188]$ a.out  
0.000000 1.000000 -0.000000  
0.100000 1.100000 -0.000000  
0.200000 1.210000 -0.000000  
0.300000 1.331000 -0.000000  
0.400000 1.464100 -0.000000  
0.500000 1.610510 -0.000000  
0.600000 1.771561 -0.000000  
0.700000 1.948717 -0.000000  
0.800000 2.143589 -0.000000  
0.900000 2.357948 -0.000000  
1.000000 2.593742 -0.000000

3.b)  
#include <stdio.h>  
#include <math.h>  

double f(double t, double y)  
{return y;}

main()  
{  
    double h=0.1, t, y, k1,k2,k3,k4,x;  
    int i;  
    /* initial value */  
    t=0.0; y=1.0;  
    for (i=0; i<=10; i++)  
        {  
            printf("t= %lf rk= %lf exact=%lf\n", t, y, -x*x*y);  
            k1=h*f(t,y);  
            k2=h*f(t+h/2, y+k1/2.0);  
            k3=h*f(t+h/2, y+k2/2.0);  
            k4=h*f(t+h, y+k3);  
            }  
    return 0;  
}
\[ y = y + \frac{(k_1 + 2.0 \times k_2 + 2.0 \times k_3 + k_4)}{6.0}; \]
\[ t = t + h; \]
}\}
return 0;
}\}

t = 0.000000 \quad \text{rk} = 1.000000 \quad \text{exact} = -0.000000
\t = 0.100000 \quad \text{rk} = 1.105171 \quad \text{exact} = -0.000000
\t = 0.200000 \quad \text{rk} = 1.221403 \quad \text{exact} = -0.000000
\t = 0.300000 \quad \text{rk} = 1.349858 \quad \text{exact} = -0.000000
\t = 0.400000 \quad \text{rk} = 1.491824 \quad \text{exact} = -0.000000
\t = 0.500000 \quad \text{rk} = 1.648721 \quad \text{exact} = -0.000000
\t = 0.600000 \quad \text{rk} = 1.822118 \quad \text{exact} = -0.000000
\t = 0.700000 \quad \text{rk} = 2.013752 \quad \text{exact} = -0.000000
\t = 0.800000 \quad \text{rk} = 2.225540 \quad \text{exact} = -0.000000
\t = 0.900000 \quad \text{rk} = 2.459601 \quad \text{exact} = -0.000000
\t = 1.000000 \quad \text{rk} = 2.718280 \quad \text{exact} = -0.000000

3.c)
#include <stdio.h>
#include <math.h>
double f(double t, double y)
{ return y; }
int main()
{
double h=0.1, y, t,B,k,x;
int i;
y=1.0; t=0.0; B=11.0;
for (i=0; i<= 10; i++)
{
 printf("t = %lf \%lf \%lf\n", t, y, -k*y-x*x*x+B*cos(t));
y= y+h*f(t,y);
t=t+h;
}
return 0;
}

t = 0.000000 1.000000 10.900000
\t = 0.100000 1.100000 10.835046
\t = 0.200000 1.210000 10.659732
\t = 0.300000 1.331000 10.375601
\t = 0.400000 1.464100 9.985261
\t = 0.500000 1.610510 9.492357
\t = 0.600000 1.771561 8.901536
\t = 0.700000 1.948717 8.218392
\t = 0.800000 2.143589 7.449415
\t = 0.900000 2.357948 6.601915
\t = 1.000000 2.593742 5.683951

I could not get my graphs to work properly ...the gnuplot would not open when I used command line (plot junk.dat)