in.c

Run

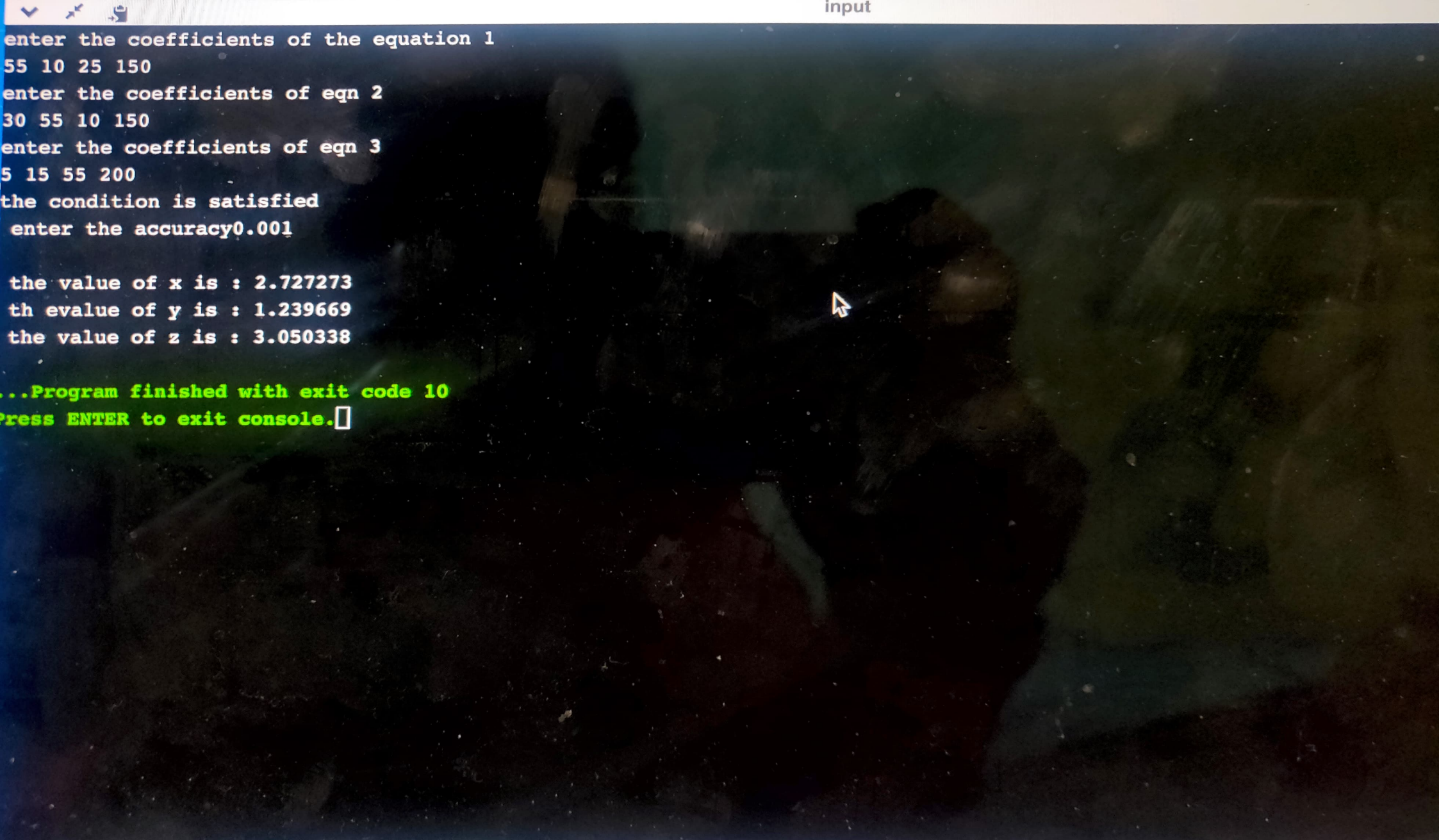
Output

```
float cp(float a , float b, float c,float t);
int main()
//definite integral problem//
{
    float a,b,c,t1,t2,h,n,I1=0,sum1,sum,cp1;
    int i;
    printf("\nenter the  initial and final temperatures \n");
    scanf(" %f %f", &t1, &t2);
    printf("\n enter the number of the segments \n");
    scanf("%f",&n);
    printf("\n enter the values of a b c\n");
    scanf(" %f %f %f",&a,&b,&c);
    h = (t2-t1)/n;
    printf("\n h : %f",h);
    sum = 0;
    sum1=0;
    sum = ((a+(b*(t1))+(c*t1*t1))+(a+(b*(t2))+(c*t2*t2)));
    for (i=0;i<n;i++)
    {
    sum1 = sum1 + (a+(b*(t1+h))+(c*pow((t1+h),2)));
}
I1 = (h*(sum +(2*sum1)))/2;
printf(" \n the integral value is:%f \n",I1);
cp1 = I1/(t2-t1);
printf("\n the trapezoidal specific heat is : %f",cp1);
getchar();
}
float cp(float a ,float b ,float c, float t)
{
    float der;
```

```
/tmp/NzUIwe63n8.o
enter the  initial and final temperatures
300 400

 enter the number of the segments
10

 enter the values of a b c
34 45 56

 h : 10.000000
 the integral value is:609716224.000000

the trapezoidal specific heat is : 6097162.000000
```

```c
{ // system of linear equations program//
    float a1,a2,a3,a4,b1,b2,b3,b4,c1,c2,c3,c4,x1,y1,z1,x0,y0,z0,errx,erry,errz,acc;
    int i ;
    printf("enter the coefficients of the equation 1 \n");
    scanf("%f %f %f %f",&a1,&a2,&a3,&a4);
   printf("enter the coefficients of eqn 2 \n");
   scanf("%f %f %f %f",&b1,&b2,&b3,&b4);
   printf("enter the coefficients of eqn 3 \n");
   scanf("%f %f %f %f",&c1,&c2,&c3,&c4);
   x0 = 0;
   y0=0;
   z0=0;
    if ((a1>=(a2+a3)) && (b2>=(b1+b3))&&(c3>=(c2+c1)))
    printf("the condition is satisfied \n ");
    else {
        printf("error");
    exit(0);
}
printf("enter the accuracy");
scanf("%f",&acc);
for(i=0;i<100;i++)
{
x1 = (a4 - (a3*z0)-(a2*y0))/a1;
y1 = (b4-(b1*x1)-(b3*z0))/b2;
z1 = (c4 -(c1*x1)-(c2*y1))/c3;
errx = fabs(x1-x0)/x0;
erry = fabs(y1-y0)/y0;
errz = fabs(z1-z0)/z0;
}
printf(" \n the value of x is : %f ",x1);
printf("\n th evalue of y is : %f ",y1);
printf("\n the value of z is : %f",z1);
getchar();
}
```

input


input
enter the coefficients of the equation 1
55 10 25 150
enter the coefficients of eqn 2
30 55 10 150
enter the coefficients of eqn 3
5 15 55 200
the condition is satisfied
enter the accuracy0.001
the value of x is : 2.727273
th evalue of y is : 1.239669
the value of z is : 3.050338
...Program finished with exit code 10
Press ENTER to exit console.

```
rintf("enter the number of terms \n");
canf("%d",&n);
or (i=0;i<n;i++)
{
    printf("the diameter is : %d \n",d);
printf("enter the velocity :");
scanf("%f",&u);
x = log(d);
y = log(u);
s = x*y;
t = x*x;
s1 = s1+x;
s2 = s2+y;
s3 = s3 +s;
s4 = s4 +t;
d = d+5;
}
b = (((n*s)-(s1*s2))/((n*s4)- pow(s1,2)));
a = ((s2 - (b*s1))/n);
printf("\n the regression constants are : a : %f , b : %f ",a,b);
for(i=0;i<n;i++)
{
unew = a*(pow(d,b));
printf("\n the diameter is :%d",d);
printf("\n the new velocity is :%f",unew);
d = d+5;
}
getchar();
}
```

Run

Output

```
/tmp/sUGCm6564M.o
enter the number of terms
4
the diameter is : 5
enter the velocity :34
the diameter is : 10
enter the velocity :23
the diameter is : 15
enter the velocity :45
the diameter is : 20
enter the velocity :64
the regression constants are : a : 3.655755 , b : 0.000456
 the diameter is :25
 the new velocity is :3.661119
 the diameter is :30
 the new velocity is :3.661423
 the diameter is :35
 the new velocity is :3.661680
 the diameter is :40
 the new velocity is :3.661903
```

main.c

Run

Output

```c
// Online C compiler to run C program online
#include <stdio.h>
#include<math.h>
#include<stdlib.h>

void main() {
float k,k1,k2,k3,k4,x=0.2,c = 0.5,a =0.5,h=0.1,y;
int i;
for (i=0;i<10;i++)
{
k1 = a*(pow(c,1.5)*(1+(pow(x,1.5))))*h;
k2 = a*(pow((c+k1/2),1.5)*(1+(pow((x+0.05),1.5))))*h;
k3 = a*(pow((c+k2/2),1.5)*(1+(pow((x+0.05),1.5))))*h;
k4 = a*(pow((c+k3),1.5)*(1+(pow((x+0.1),1.5))))*h;
k =(k1+(2*k2)+(2*k3)+k4)/6;
y = c+k ;
x = x+h;
printf("\n k is :%f",k);
printf(" \n the distance is : %f , the concentration is : %f ", i,x,y);
getchar();
}
}
```

```
/tmp/dssbDeBUF2.o
k is :0.020509
the distance is : 0.300000 , the concentration is : 0.520509
```

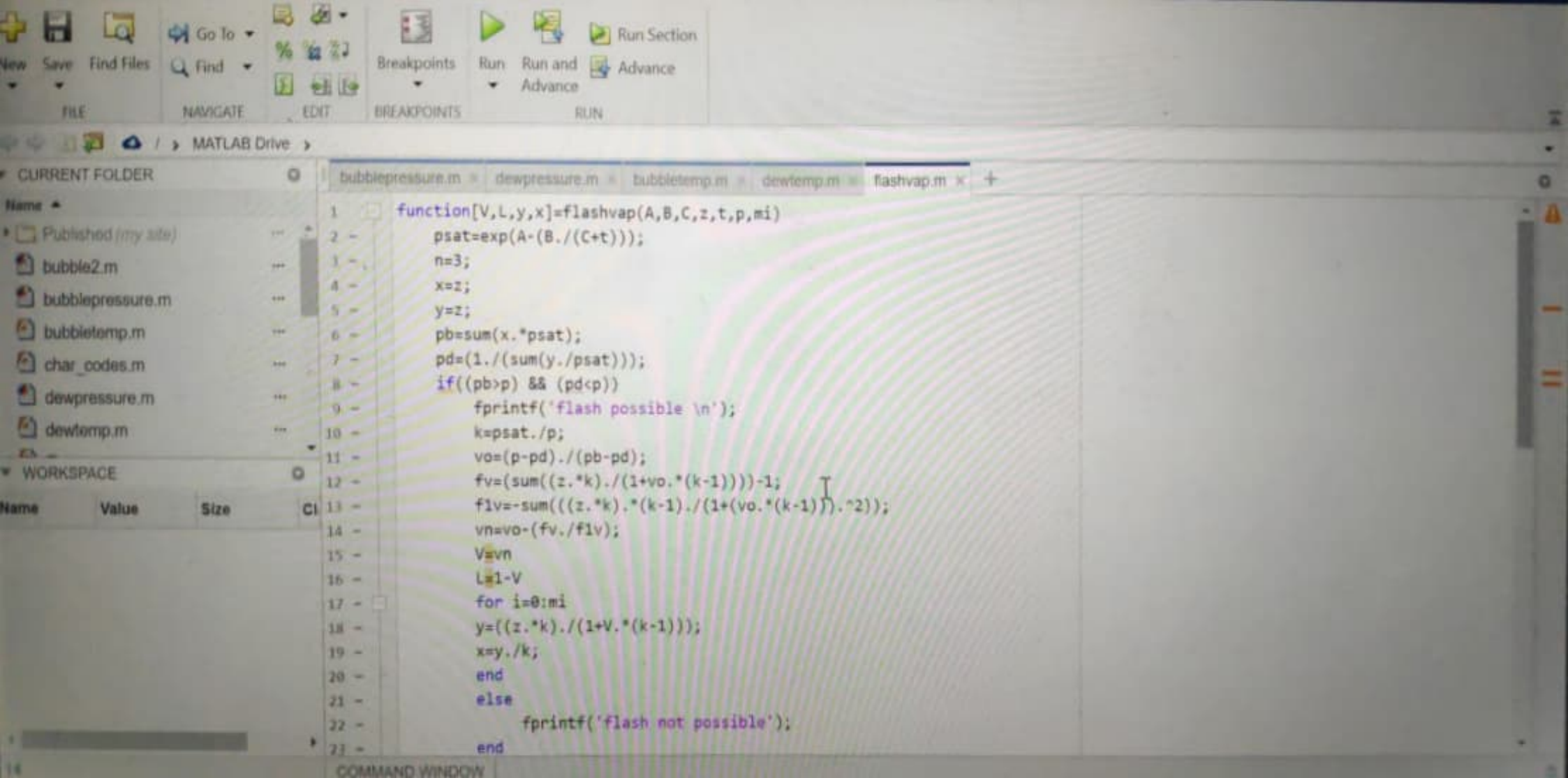
ain.c

Run

Output

```c
// Online C compiler to run C program online
#include <stdio.h>
#include<math.h>
void main()
{
int d = 5;
float s,x,y,s1,s2,s3,s4,a=0,b=0,u,unew,t;
int n ,i;
printf("enter the number of terms \n");
scanf("%d",&n);
for (i=0;i<n;i++)
{
    printf("the diameter is : %d \n",d);
printf("enter the velocity :");
scanf("%f",&u);
x = log(d);
y = log(u);
s = x*y;
t = x*x;
s1 = s1+x;
s2 = s2+y;
s3 = s3 +s;
s4 = s4 +t;
d = d+5;
}
b = (((n*s)-(s1*s2))/((n*s4)- pow(s1,2)));
a = ((s2 - (b*s1))/n);
printf("\n the regression constants are : a : %f , b : %f ",a,b);
for(i=0;i<n;i++)
{
```

```
/tmp/sUGCm6564M.o
enter the number of terms
4
the diameter is : 5
enter the velocity :34
the diameter is : 10
enter the velocity :23
the diameter is : 15
enter the velocity :45
the diameter is : 20
enter the velocity :64
the regression constants are : a : 3.655755 , b : 0.000456
 the diameter is :25
 the new velocity is :3.661119
 the diameter is :30
 the new velocity is :3.661423
 the diameter is :35
 the new velocity is :3.661680
 the diameter is :40
 the new velocity is :3.661903
```



Go To
Find
Find Files
Breakpoints
Run
Run and Advance
Run Section
Advance
FILE
NAVIGATE
EDIT
BREAKPOINTS
RUN
MATLAB Drive
CURRENT FOLDER
Name
Published (my site)
bubble2.m
bubblepressure.m
bubbletemp.m
char_codes.m
dewpressure.m
dewtemp.m
WORKSPACE
Name
Value
Size
bubblepressure.m
dewpressure.m
bubbletemp.m
dewtemp.m
flashvap.m

```
function[V,L,y,x]=flashvap(A,B,C,z,t,p,mi)
    psat=exp(A-(B./(C+t)));
    n=3;
    x=z;
    y=z;
    pb=sum(x.*psat);
    pd=(1./(sum(y./psat)));
    if((pb>p) && (pd<p))
        fprintf('flash possible \n');
        k=psat./p;
        vo=(p-pd)./(pb-pd);
        fv=(sum((z.*k)./(1+vo.*(k-1))))-1;
        f1v=-sum(((z.*k).*(k-1)./(1+(vo.*(k-1))).^2));
        vn=vo-(fv./f1v);
        V=vn
        L=1-V
        for i=0:mi
        y=((z.*k)./(1+V.*(k-1)));
        x=y./k;
        end
        else
            fprintf('flash not possible');
        end
```

COMMAND WINDOW

MATLAB Drive

CURRENT FOLDER

Name

Published (my site)

bubble2.m

bubblepressure.m

bubbletemp.m

char_codes.m

dewpressure.m

dewtemp.m

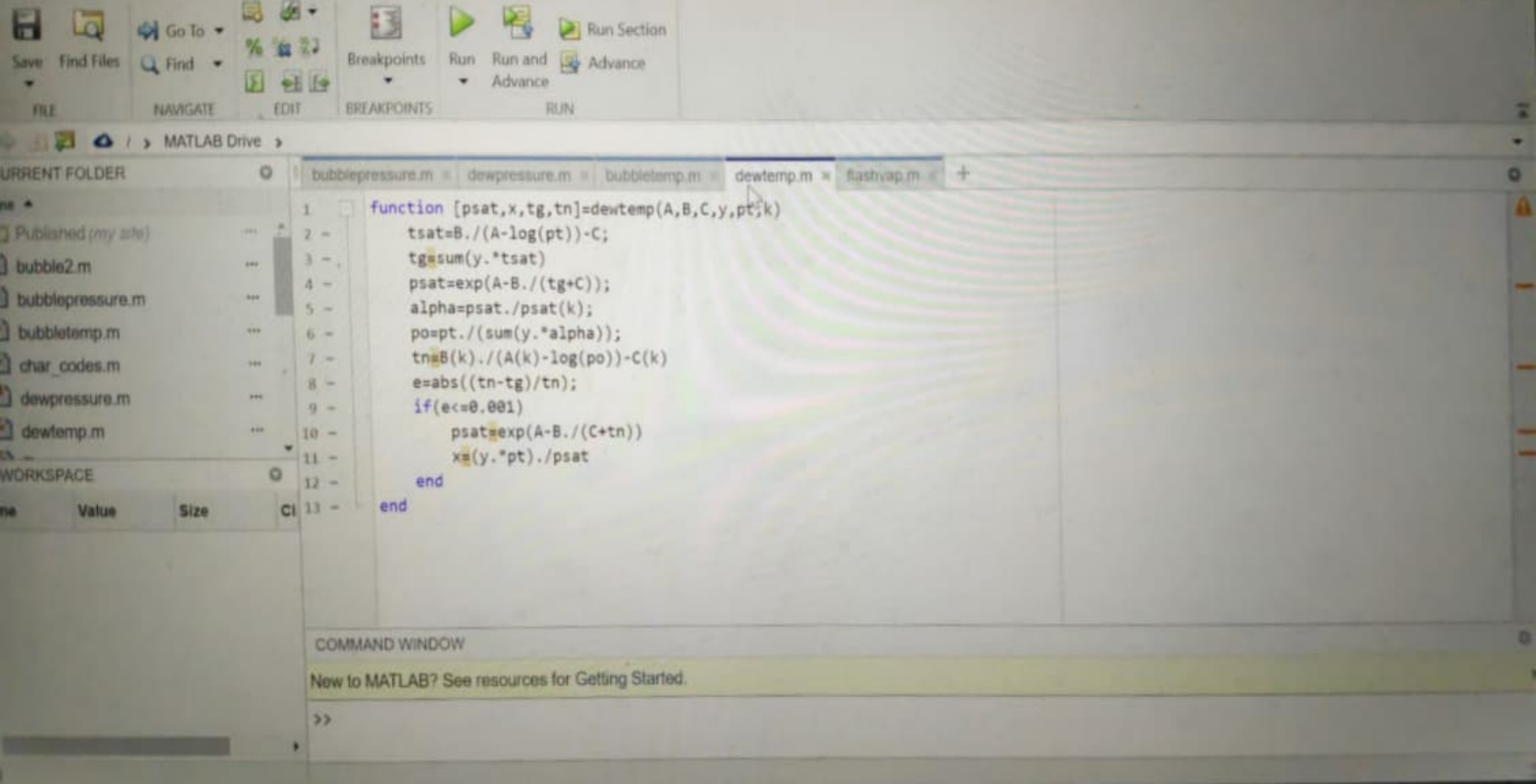
WORKSPACE

Name	Value	Size	Cl

bubblepressure.m | dewpressure.m | bubbletemp.m | dewtemp.m | flashvap.m

```
12 -        fv=(sum((z.*k)./(1+vo.*(k-1))))-1;
13 -        f1v=-sum(((z.*k).*(k-1)./(1+(vo.*(k-1))).^2));
14 -        vn=vo-(fv./f1v);
15 -        V=vn
16 -        L=1-V
17 -        for i=0:mi
18 -        y=((z.*k)./(1+V.*(k-1)));
19 -        x=y./k;
20 -        end
21 -        else
22 -            fprintf('flash not possible');
23 -        end
24 -    for i=1:n
25 -        fprintf('x=%f \n ',x(i));
26 -        fprintf('y=%f \n',y(i));
27 -    end
28 -    end
29
30
31
32
33
34
```

COMMAND WINDOW


Save
Find Files
Go To
Find
FILE
NAVIGATE
EDIT
Breakpoints
BREAKPOINTS
Run
Run and Advance
Run Section
Advance
RUN
MATLAB Drive
URRENT FOLDER
Published (my site)
bubble2.m
bubblepressure.m
bubbletemp.m
char_codes.m
dewpressure.m
dewtemp.m
WORKSPACE
Value
Size
bubblepressure.m
dewpressure.m
bubbletemp.m
dewtemp.m
flashvap.m
1 function [psat,x,tg,tn]=dewtemp(A,B,C,y,pt,k)
2 tsat=B./(A-log(pt))-C;
3 tg=sum(y.*tsat)
4 psat=exp(A-B./(tg+C));
5 alpha=psat./psat(k);
6 po=pt./(sum(y.*alpha));
7 tn=B(k)./(A(k)-log(po))-C(k)
8 e=abs((tn-tg)/tn);
9 if(e<=0.001)
10 psat=exp(A-B./(C+tn))
11 x=(y.*pt)./psat
12 end
13 end
COMMAND WINDOW
New to MATLAB? See resources for Getting Started.
>>

MATLAB Drive

CURRENT FOLDER

Name

- Published (my site)
- bubble2.m
- bubblepressure.m
- bubbletemp.m
- char_codes.m
- dewpressure.m
- dewtemp.m

WORKSPACE

Name	Value	Size	Cl

bubblepressure.m | dewpressure.m | bubbletemp.m | dewtemp.m | flashvap.m

```
function [psat,y,tg,tn]=bubbletemp(A,B,C,x,p,k)
    tsat=(B./(A-log(p)))-C;
    tg=sum(x.*tsat);
    psat=exp(A-(B./(tg+C)));
    alp=psat./psat(k);
    po=p./(sum(x.*alp))
    tn=B(k)./(A(k)-log(po))-C(k);
    e=abs((tn-tg)./tn);
    if(e<=0.001)
        psat=exp(A-B./(C+tn))
    end
    y=(x.*psat)./p
end
```

COMMAND WINDOW

New to MATLAB? See resources for Getting Started.

>>

```
#include<stdio.h>
#include<math.h>
#include<conio.h>
void main()
{
clrscr()
float v,f1v,fv,a,v1,b,p,t,r=0.0821;
float pc=72.0,tc=304;
printf("enter the value of temperature and pressure");
scanf("%f%f",&p,&t);
v=(r*t)/p;
printf("ideal molar volume is %f\n",v);
a=(27*r*r*tc*tc)/(64*pc);
b=(r*tc)/(8*pc);
```

1:1

```
printf("enter the value of temperature and pressure");
scanf("%f%f",&p,&t);
v=(r*t)/p;
printf("ideal molar volume is %f\n",v);
a=(27*r*r*tc*tc)/(64*pc);
b=(r*tc)/(8*pc);
printf("value of a and b are %f & %f\n",a,b);
fv=(p+a/v*v)*(v-b)-r*t;
f1v=(v-b)*(-2*a)/(v*v*v))+p+(a/(v*v));
v1=v-(fv/f1v);
if(fabs(v1-v)< 0.001)
{
printf("molar volume is %f\n",v1);
}
```

1:1

```
fv=(p+a/v*v)*(v-b)-r*t;
f1v=(v-b)*(-2*a)/(v*v*v))+p+(a/(v*v));
v1=v-(fv/f1v);
if(fabs(v1-v)< 0.001)
{
printf("molar volume is %f\n",v1);
}
else
{
v=v1;
printf("molar volume is %f\n",v);
}
getch();
}
```