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    NEWTON法演習の解答例  
    ベンゼン(A) - トルエン(B)系の  
    気液平衡計算プログラム
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#include <stdio.h>  
#include <math.h>
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```
int main(void){  
    double t, newt, f, df, ya;  
    printf("Please Input Initial Value T0 =");  
    scanf("%lf", &t);  
  
    LABEL:  
  
    f=101.3-exp(15.33-3785.0/t)*0.4-exp(15.68-4247.0/t)*0.6;  
    df=-0.4*exp(15.33-3785.0/t)*(3785.0/(t*t))  
    -0.6*exp(15.68-4247.0/t)*(4247.0/(t*t));  
  
    printf(" t=%f f(t)= %f ¥n", t,f);  
  
    newt=t-(f/df);  
  
    if (pow(f,2.0) > 0.00001)  
    {  
        t=newt;  
        goto LABEL;  
    }  
  
    ya=(exp(15.33-3785.0/t)*0.4)/101.3;  
    printf("** Final Answer **¥n");  
    printf(" t=%f [ ]¥n",t-273.15);  
    printf(" f(t)=%f¥n",f);  
    printf(" yA=%f¥n",ya);  
  
    return(0);  
}
```

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-----実行開始-----
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```
Please Input Initial Value T0 =400.0  
t=400.000000 f(t)= -134.836777  
t=376.989603 f(t)= -27.613436  
t=369.307307 f(t)= -2.302423  
t=368.541877 f(t)= -0.020799  
t=368.534835 f(t)= -0.000002  
** Final Answer **  
t=95.384835 [ ]  
f(t)=-0.000002  
yA=0.622024
```

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-----おしまい-----
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準備ができたならどれかキーを押してください . . .
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