

The program is

```
1 #include <stdio.h>
2 #include <math.h>
3
4 double f(double x){
5     return x*x*x-2;
6 }
7
8 double df(double x){
9     return 3*x*x;
10 }
11
12 double g(double x){
13     return x-f(x)/df(x);
14 }
15
16 int main(){
17     double x=1;
18     int i;
19     for(i=0;i<10;i++){
20         double xold=x;
21         x=g(x);
22         if(fabs(xold-x)<1.0e-12) break;
23         printf("%d %30.20e\n",i+1,x);
24     }
25     return 0;
26 }
27
```

the output is

```
1 1.333333333333333325932e+00
2 1.26388888888888883955e+00
3 1.25993349344997707107e+00
4 1.25992105001776977247e+00
5 1.25992104989487319067e+00
```

the graph is

