```
/*
read code and dimension from data file
E Ellipse, C Circle, R Rectangle
use switch statement to select formula
calculate area and perimeter
*/
#include <stdio.h>
#include <math.h>
#define PI 3.14159265
#define FILENAME "areaPerimeter.txt"

int main()
{
   int   code, c, count;
   float len_1, len_2;
   float area, perimeter;

   FILE *infile;
   infile = fopen( FILENAME, "r" );
   fscanf( infile, "%d", &count );

   printf( "Code Len_1 Len_2   Area   Perimeter\n" );
   for (c=0; c<count; c++ )
   {
      fscanf( infile, "%d %f %f", &code, &len_1, &len_2 );

      switch( code )
      {
         case 1: //ellipse
                 area      = PI * len_1 * len_2;
                 perimeter = 2 * PI * sqrt( (pow(len_1,2)+pow(len_2,2)) / 2 );
                 break;
         case 2: //triangle
                 area      = len_1 * len_2 / 2;
                 perimeter = len_1 + len_2 * sqrt( pow(len_1,2)+pow(len_2,2) );
                 break;
         case 3: //rectangle
                 area      = len_1 * len_2;
                 perimeter = 2 * ( len_1 + len_2 );
      }

      printf( " %d   %5.1f %5.1f %7.1f %7.1f\n", code, len_1, len_2, area,perimeter );
   }
   return 0;
}


areaPerimeter.txt
4
1 25 7
2 8 6
3 3 8
1 3 2


----jGRASP exec: C:\Documents and Settings\My Documents\comp 1200\Assignments\a.exe
Code Len_1 Len_2   Area   Perimeter
 1    25.0   7.0   549.8   115.3
 2     8.0   6.0    24.0    68.0
 3     3.0   8.0    24.0    22.0
 1     3.0   2.0    18.8    16.0
----jGRASP: operation complete.
```