#include<bits/stdc++.h>  
  
using namespace std ;  
  
struct figure{  
 char fig ;  
 double x1 ,y1 , x2,y2, x3,y3;  
  
}ara[102];  
  
  
double dis(double x1,double y1 , double x2, double y2){  
  
 return sqrt( (( x2-x1) \* (x2-x1)) + ((y2-y1) \* (y2-y1)) ) ;  
  
}  
  
  
bool isInCircle(double x, double y , double a, double b , double rad ){  
  
 double dist= dis(x,y,a,b) ;  
  
 if(dist < rad ){  
 return true ;  
 }  
  
 else{  
 return false ;  
 }  
  
}  
  
  
double calArea(double x1 , double y1 , double x2 , double y2, double x3 , double y3 ){  
  
  
 double res = 0.5 \* fabs(( x1 \* y2 + x2\* y3 + x3\* y1 ) - ( x2\*y1 + x3\*y2 + x1\*y3 ) ) ;  
  
 return res ;  
  
}  
  
  
  
  
  
int main(){  
 //freopen("input.txt","r",stdin) ;  
 char ch ;  
 int cnt =0 ;  
 int i =0 ;  
 while(cin>>ch && ch!= '\*'){  
  
 if(ch == 'c'){  
 ara[i].fig =ch ;  
 cin>>ara[i].x1>>ara[i].y1 >>ara[i].x2 ;  
 ara[i].y2 =0 , ara[i].x3 =0 , ara[i].y3 = 0;  
  
  
 }  
  
 if(ch == 'r'){  
 ara[i].fig =ch ;  
 cin>>ara[i].x1>>ara[i].y1 >>ara[i].x2>>ara[i].y2 ;  
 ara[i].x3 =0 , ara[i].y3 = 0;  
 }  
  
 if(ch == 't'){  
  
 ara[i].fig =ch ;  
 cin>>ara[i].x1>>ara[i].y1 >>ara[i].x2>>ara[i].y2>>ara[i].x3>>ara[i].y3 ;  
  
 }  
 i++ ;  
 cnt++ ;  
 }  
  
  
  
 double x,y ;  
 int st= 0 ;  
 while(cin>>x>>y ){  
  
 if( x==9999.9 && y== 9999.9){  
 break ;  
 }  
 ++st;  
 bool flag= false ;  
  
 for(int i=0 ; i<cnt ; i++){  
 double a = ara[i].x1 ;  
 double b = ara[i].y1 ;  
 double c = ara[i].x2 ;  
 double d = ara[i].y2 ;  
 double e = ara[i].x3 ;  
 double f = ara[i].y3 ;  
  
  
 if(ara[i].fig == 'c' ){  
  
 if(isInCircle(a,b,x,y,c) == true ){  
 printf("Point %d is contained in figure %d\n",st,i+1) ;  
 flag = true ;  
  
  
 }  
 }  
 else if(ara[i].fig == 'r') {  
  
 if( ( x>a && x<c ) && (y>d && y<b) ){  
 printf("Point %d is contained in figure %d\n",st,i+1) ;  
 flag = true ;  
  
  
  
 }  
 }  
 else{  
 // triangle part  
  
 double a1 = calArea(x,y,c,d,e,f) ;  
 double a2 = calArea(a,b,x,y,e,f) ;  
 double a3 = calArea(a,b,c,d,x,y) ;  
  
 double Area = calArea(a,b,c,d,e,f) ;  
  
 double totalArea = a1+a2+a3 ;  
  
 double diff = fabs(Area - totalArea ) ;  
  
 if( diff < (1e-6) ){  
 printf("Point %d is contained in figure %d\n",st,i+1) ;  
 flag = true;  
  
 }  
  
  
  
 }  
  
  
 }  
  
 if(flag == false ){  
 printf("Point %d is not contained in any figure\n",st) ;  
  
 }  
  
 }  
  
  
}