
Circles (1)

P84786_en

To solve this exercise you will need the definition of *Point* and *distance ()* of problem P46254.

Write a procedure

```
void move(Point& p1, const Point& p2);
```

that moves the point *p1* according to the coordinates indicated by the point *p2*.

For instance, being *p1* the point (2, 1), and *p2* the point (−0.5, 4). Then *move(p1, p2)* would do that *p1* was (1.5, 5).

Additionally, using the definition

```
struct Circle {  
    Point center;  
    double radius;  
};
```

write two procedures,

```
void scale ( Circle & c, double sca);
```

that scales the circle *c* proportionately to the real strictly positive *sca*, and

```
void move(Circle& c, const Point& p);
```

that moves the circle *c* according to the coordinates indicated by *p*.

For instance, being *c* a circle of center (1, 2) and radius 3. Then, *scale (c, 2)* would obtain a circle of center (1, 2) and radius 6. However, if *p* is (3.5, −1), *move(c, p)* would obtain a circle of center (4.5, 1) and radius 3.

Write also a function that prints if a point *p* is inside a circle *c*:

```
bool is_inside (const Point& p, const Circle & c);
```

Suppose that the radii are always strictly positive, and that *p* will never be exactly in the border of *c*.

Observation

You only need to submit the required classes; your main program will be ignored. Strictly obey the type definitions of the statement.

Problem information

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