**Problem A**

In this problem, you need to take the height and width of a rectangle as input and output its area. You must use the following template below and write your code inside the blocks assigned for you. Do not change anything else.

#include <iostream>

using namespace std;

struct Rectangle{

// Your code starts here # 1

// Your code ends here # 1

};

int main() {

float width, height;

cin>>width>>height;

Rectangle\* r = new Rectangle(width, height);

cout<<r->area()<<endl;

return 0;

}

Sample Case:

| Input | Output |
| --- | --- |
| 3.4  3.5 | 11.9 |
| 3  4 | 12 |

**Problem B**

In this problem, you need to take the radius of a circle as input and output its area. You must use the following template below and write your code inside the blocks assigned for you. Do not change any thing else.

#include <iostream>

using namespace std;

struct Circle{

float radius;

Circle(float r){

radius = r;

}

float area(){

return 3.1416 \* radius \*radius;

}

};

int main() {

// Your code starts here # 1

// Your code ends here # 1

}

Sample Case:

| Input | Output |
| --- | --- |
| 3 | 28.2744 |
| 4 | 50.2656 |

**Problem C**

In this problem, you need to take a student’s name, his age, his father’s name, and his father’s age as input and output the father’s age. You must use the following template below and write your code inside the blocks assigned for you. Do not change any thing else.

#include <iostream>

using namespace std;

struct Father{

string name;

int age;

Father(string n, int a){

name = n;

age = a;

}

};

struct Student{

string name;

int age;

Father\* father;

Student(string n, int a, string fathers\_name, int fathers\_age){

name = n;

age = a;

father = new Father(fathers\_name, fathers\_age);

}

float get\_fathers\_age(){

// Your code starts here # 1

// Your code ends here # 1

}

};

int main() {

string student\_name, fathers\_name;

int student\_age, fathers\_age;

cin>>student\_name>>student\_age;

cin>>fathers\_name>>fathers\_age;

Student\* st = new Student(student\_name, student\_age, fathers\_name, fathers\_age);

cout<<st->get\_fathers\_age()<<endl;

return 0;

}

Sample Case:

| Input | Output |
| --- | --- |
| Alice  20  Bob  56 | 56 |