

Problem Description:

Jannu and Preethi both went to Egypt for visiting Pyramids.

On seeing the Pyramids they were in discussion.

During the discussion Jannu asked Preethi, what will be the area of this Pyramid.

Preethi have no idea about it.

Can you help Preethi in calculating the area of this Pyramid?

Functional Description:

$$\text{Area} = (\text{height} * \text{base})/2$$

Constraints:

$$1 \leq \text{height} \leq 500$$

$$1 \leq \text{base} \leq 500$$

Input Format:

The only line of input has two floating point values representing height and base respectively separated by a space.

Output Format:

In the only line of output print the area of the pyramid with only three values after decimal point.

✓ Logical Test Cases

Test Case 1	Test Case 2
INPUT (STDIN) 31.5 43.7	INPUT (STDIN) 176.3 120.6
EXPECTED OUTPUT 688.275	EXPECTED OUTPUT 10630.890

✓ Mandatory Test Cases

Test Case 1	Test Case 2	Test Case 3
KEYWORD float base,height,area;	KEYWORD scanf	KEYWORD printf

✓ Complexity Test Cases

Test Case 1	Test Case 2	Test Case 3
CYCLOMATIC COMPLEXITY 1	TOKEN COUNT 50	NLOC 10

CODE:

```
//CH.SC.U4CSE24022
#include <stdio.h>
int main() {
    float base,height,area;
    scanf ("%f%f",&height,&base);
    area = (height*base)/2;
    printf ("% .3f",area);
    return 1;
}
```

OUTPUT:

```
31.5 43.7
688.275
Process returned 1 (0x1)  execution time : 4.028 s
Press any key to continue.
```

```
176.3 120.6
10630.890
Process returned 1 (0x1)  execution time : 4.553 s
Press any key to continue.
```

C	Session	Input & Output	Question Information	Level 2 Challenge 2
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Problem Description:

Sajid loves super heroes he used to imagine himself to be a hero.

One day his teacher was taking a class about shapes and asked the students to find the Area of the triangle using Heron's formula.

Sajid misheard this as Hero's formula and was curious to discover the Hero's formula for finding the area of the triangle.

Help Sajid to solve his math problem by using the correct logic in your code.

Functional Description:

Area = $\sqrt{s(s - a)(s - b)(s - c)}$, where

$s = (a + b + c) / 2$ and

a, b & c are the sides of triangle.

Constraints:

$1 \leq a \leq 15$

$1 \leq b \leq 15$

$1 \leq c \leq 15$

Input Format:

Only Line of input has 3 integers representing 3 side of the triangle separated by a space.

Output Format:

Print the area of the triangle with only two values after the decimal point

✓ Logical Test Cases

Test Case 1	Test Case 2
INPUT (STDIN)	INPUT (STDIN)
5 5 4	6 5 4
EXPECTED OUTPUT	EXPECTED OUTPUT
9.17	6.48

✓ Mandatory Test Cases

Test Case 1	Test Case 2	Test Case 3
KEYWORD	KEYWORD	KEYWORD
int a,b,c;	float s,area;	scanf
Test Case 4		
KEYWORD		
printf		

✓ Complexity Test Cases

Test Case 1	Test Case 2	Test Case 3
CYCLOMATIC COMPLEXITY	TOKEN COUNT	NLOC
1	95	13

CODE:

```
//CH.SC.U4CSE24022
#include <stdio.h>
#include <math.h>
int main()
{
    int a,b,c;
    float s,area;
    scanf ("%d%d%d", &a, &b, &c);
    s = (a+b+c)/2;
    area = sqrt((s*(s-a)*(s-b)*(s-c)));
    printf("%.2f",area);
    return 1;
}
```

OUTPUT:

```
5 5 4
9.17
Process returned 1 (0x1)    execution time : 24.824 s
Press any key to continue.
```

```
6 5 4
6.48
Process returned 1 (0x1)    execution time : 4.615 s
Press any key to continue.
```

Problem Description:

Swathy and Nancy were selected for SpaceY programme which was about to take place the next year ,in their interview they were struck with the question.

The question is that if the floating number is given they have to create a code to display the rightmost integer from the integer part of the number.

If they have the logic for the code they will be the part of the digital meter designing for the SpaceY Mars launch which was their dream.

Can you help them with a logic of the code for the criteria given to them?

Constraints:

$25.0000 \leq \text{spacenum} < 999.0000$

Input Format:

Only Line of Input has single value of type float.

Output Format:

Print the rightmost integer from the input value.

Explanation :

If the input is given 124.34, then the output to be displayed is 4 (i.e) Before decimal the integral part is 124 , in that last digit is 4.

✓ Logical Test Cases

<p>Test Case 1</p>	<p>Test Case 2</p>
<p>INPUT (STDIN)</p>	<p>INPUT (STDIN)</p>
<p>345.476</p>	<p>759.231</p>

EXPECTED OUTPUT

5

EXPECTED OUTPUT

9

▼ Mandatory Test Cases

Test Case 1

KEYWORD

float spacenum;

Test Case 2

KEYWORD

scanf

Test Case 3

KEYWORD

printf

▼ Complexity Test Cases

Test Case 1

CYCLOMATIC COMPLEXITY

1

Test Case 2

TOKEN COUNT

55

Test Case 3

NLOC

12

CODE:

```
//CH.SC.U4CSE24022
#include <stdio.h>
int main()
{
    float spacenum;
    scanf ("%f", &spacenum);
    spacenum=(int)spacenum%10;
    printf ("% .0f", spacenum);
    return 1;
}
```

OUTPUT:

```
345.476
5
Process returned 1 (0x1)    execution time : 3.493 s
Press any key to continue.
```

759.231

9

Process returned 1 (0x1) execution time : 4.220 s

Press any key to continue.

|

Problem Description:

Issac loved to do agriculture he worked for a 9-5 job in the week days and dedicated to do agriculture on the week end.

He dreamed to combine technology and agriculture together in the future. He started with a small automated automobile that can water the plants when he is not available in the field.

He measured his field in square feet but for generalising his project he wished to convert it to acres.

Can you help him with a code that reads the area of the farmer's field in square feet and display the area in acres?

Functional Description:

There are 43,560 square feet in an acre.

Constraints:

20000.00 ≤ tractLand ≤ 70000.00

Input format:

Single Line of Input has a tractLand's area in square feet of type float.

Output format:

Print the input area of the tractLand in square feet and its equivalent area in acres in a single line.

Refer sample testcases for formating information

Logical Test Cases

<p>Test Case 1</p> <p>INPUT (STDIN)</p> <pre>45587.23</pre> <p>EXPECTED OUTPUT</p> <pre>45587.23 sq.ft is equal to 1.05 acres</pre>	<p>Test Case 2</p> <p>INPUT (STDIN)</p> <pre>58887.23</pre> <p>EXPECTED OUTPUT</p> <pre>58887.23 sq.ft is equal to 1.35 acres</pre>
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✓ Mandatory Test Cases

<p>Test Case 1</p> <p>KEYWORD</p> <pre>float tractLand,tractLandAcred;</pre>	<p>Test Case 2</p> <p>KEYWORD</p> <pre>scanf</pre>	<p>Test Case 3</p> <p>KEYWORD</p> <pre>printf</pre>
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✓ Complexity Test Cases

<p>Test Case 1</p> <p>CYCLOMATIC COMPLEXITY</p> <pre>1</pre>	<p>Test Case 2</p> <p>TOKEN COUNT</p> <pre>49</pre>	<p>Test Case 3</p> <p>NLOC</p> <pre>10</pre>
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CODE:

```
//CH.SC.U4CSE24022
#include <stdio.h>

int main() {
    float tractLand,tractLandAcred;
    scanf ("%f",&tractLand);
    tractLandAcred = tractLand / 43560;
    printf ("% .2f sq ft is equal to % .2f acres",tractLand,tractLandAcred);
    return 0;
}
```

OUTPUT:

```
45587.23
45587.23 sq ft is equal to 1.05 acres
Process returned 0 (0x0) execution time : 3.517 s
Press any key to continue.
```

```
58887.23
58887.23 sq ft is equal to 1.35 acres
Process returned 0 (0x0) execution time : 3.718 s
Press any key to continue.
```

C	Session	Input & Output	Question Information	Level 2	Challenge 5
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Problem Description:

Roopa and Atifa are sisters they love to compete by playing math games which gradually helped them in their academics one day.

Roopa gave her a math puzzle to her sister.

The puzzle involves two decimal numbers.

Atifa just had add the two floating point numbers but the twist is Atifa should only add the integer part of the decimal number.

But Atifa thought she can code a program for the puzzle but she is finding it difficult.

Can you help her with the suitable logic?

Explanation:

Roopa gave her sister two floating point numbers : 23.44 and 33.22 Her sister need to identify the left side integral part of given numbers are 23 and 33 . Finally the added output value is 56.

Constraint:

$0.00 \leq \text{num1} \leq 500.00$

$0.00 \leq \text{num2} \leq 500.00$

Input Format:

First Line: Has Single Input of type float representing first number

Second Line: Has Single Input of type float representing second number

Output Format:

Print the Sum of Integer parts of two numbers

▼ Logical Test Cases

Test Case 1

INPUT (STDIN)

99.26

34.99

EXPECTED OUTPUT

133

Test Case 2

INPUT (STDIN)

139.25

163.18

EXPECTED OUTPUT

302

▼ Mandatory Test Cases

Test Case 1

KEYWORD

float num1,num2;

Test Case 2

KEYWORD

int sum;

Test Case 3

KEYWORD

scanf

Test Case 4

KEYWORD

printf

▼ Complexity Test Cases

Test Case 1

CYCLOMATIC COMPLEXITY

1

Test Case 2

TOKEN COUNT

59

Test Case 3

NLOC

12

CODE:

```
//CH.SC.U4CSE24022
#include <stdio.h>
int main() {
    float num1, num2, sum;
    scanf ("%f%f", &num1, &num2);
    num1 = (int)num1;
    num2 = (int)num2;
    sum = num1 + num2;
    printf ("% .0f", sum);
    return 1;
}
```

OUTPUT:

99.26

34.99

133

Process returned 1 (0x1) execution time : 6.548 s

Press any key to continue.

139.25

163.18

302

Process returned 1 (0x1) execution time : 4.737 s
Press any key to continue.

Problem Description:

Arul and Kani own the farm in the beautiful location of the city were lot of cows was roaming around. One day Arul and Kani was out of the city. On that day cows have eaten the grasses in the farm which is circular in structure.

When Arul and Kani reached the location they were shocked to see the grass being eaten by cows. Now they would like to know for how much area and circumference of the farm the cows have eaten the grass.

Can you help them finding it.

Functional Description:

$$\text{Circumference} = 2\pi r$$

$$\text{Area} = \pi r^2$$

$$\pi = 3.14$$

Constraints:

$$1.00 \leq \text{rad} \leq 100.00$$

Input Format:

The only line of the input represents the radius of the circle of type float.

Output Format:

Print the area in the first line and circumference in the second line with only 2 values after decimal point

Logical Test Cases**Test Case 1****INPUT (STDIN)**

78.6

EXPECTED OUTPUT

19398.79

493.61

Test Case 2**INPUT (STDIN)**

91.3

EXPECTED OUTPUT

26174.07

573.36

Mandatory Test Cases**Test Case 1****Test Case 2****Test Case 3**

KEYWORD

```
float rad;
```

KEYWORD

```
float PI=3.14,area,ci;
```

KEYWORD

```
%.2f
```

✓ Complexity Test Cases

Test Case 1

CYCLOMATIC COMPLEXITY

1

Test Case 2

TOKEN COUNT

70

Test Case 3

NLOC

13

CODE:

```
//CH.SC.U4CSE24022
#include <stdio.h>
#define PI 3.14
int main()
{
    float rad,area,ci;
    scanf ("%f",&rad);
    area = PI*rad*rad;
    ci = 2*PI*rad;
    printf ("% .2f\n",area);
    printf ("% .2f",ci);
    return 1;
}
```

OUTPUT:

```
78.6
```

```
19398.79
```

```
493.61
```

```
Process returned 1 (0x1)    execution time : 2.130 s
```

```
Press any key to continue.
```

78.6

19398.79

493.61

Process returned 1 (0x1) execution time : 2.130 s

Press any key to continue.

C	Session	Input & Output	Question Information	Level 2	Challenge 7
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Problem Description:

Athika and Ritu got a nice job at a MNC company .

She was confused with the salary credited in her account.

To verify if the correct amount of HRA and DA was provided to them Ritu and Athika planned to develop a software that calculates the salary pay if the basic pay was provided.

The Salary policy of Athika and Ritu's Company is as follows:

HRA is 80% of the basic pay and

DA is 40% of basic pay

Can you help Ritu and Athika in the software development?

Constraints:

20000≤basic≤75000

Input Format:

Single Integer representing the basic pay of the employee.

Output Format:

Print the Gross salary of employee by adding the certain amount of HRA and DA to the basic pay.

▼ Logical Test Cases

Test Case 1

INPUT (STDIN)

25462

EXPECTED OUTPUT

56016.40

Test Case 2

INPUT (STDIN)

37135

EXPECTED OUTPUT

81697.00

▼ Mandatory Test Cases

Test Case 1

KEYWORD

```
float basic,sal;
```

Test Case 2

KEYWORD

```
printf
```

Test Case 3

KEYWORD

```
scanf
```

▼ Complexity Test Cases

Test Case 1

CYCLOMATIC COMPLEXITY

1

Test Case 2

TOKEN COUNT

55

Test Case 3

NLOC

10

CODE:

```
//CH.SC.U4CSE24022
#include <stdio.h>
int main() {
    float basic,hra,da,sal;
    scanf ("%f",&basic);
    hra = 0.80 * basic;
    da = 0.40 * basic;
    sal = basic + hra + da;
    printf ("% .2f",sal);
    return 1;
}
```

OUTPUT:

```
25462
```

```
56016.40
```

```
Process returned 1 (0x1)  execution time : 2.599 s
```

```
Press any key to continue.
```

37135

81697.00

Process returned 1 (0x1) execution time : 4.059 s

Press any key to continue.

Problem Description:

Aaron took his girl friend Binita to a restaurant as he got a job of his dreams.

Since he had small welcome interview he was little bit tensed.

Binita figured this out and to get back Aaron's confidence she gave him a little task.

When they received the bill for the food they ordered,she asked aaron to find out the tax amount of the bill and tip for the meal through a computer code.

Aaron can use your local tax rate when computing the amount of tax owing.

Can you help aaron to code the suitable logic.

Note:

Local tax= 18%

Tip amount=5%

Constraint:

$50 \leq \text{billwt} \leq 1300$

Where billwt is the variable you should use for getting the bill amount without tax and tip.

Input format:

Single Line of input has single value of type integer representing the Bill Amount Without Tax and Tip

Output format:

In First Line Print the calculated Tax with only 2 values after decimal point.

In the Second Line Print the calculated Tip with only 2 values after decimal point.

In the Third Line Print the Total Bill Amount with tax and tip with only 2 values after decimal point.

▼ Logical Test Cases**Test Case 1****INPUT (STDIN)**

521

EXPECTED OUTPUT

The Tax is 93.78
The Tip is 26.05
Total Bill With Tax and Tip is 640.83

Test Case 2**INPUT (STDIN)**

734

EXPECTED OUTPUT

The Tax is 132.12
The Tip is 36.70
Total Bill With Tax and Tip is 902.82

▼ Mandatory Test Cases

Test Case 1

KEYWORD

```
int billwt;
```

Test Case 2

KEYWORD

```
float tax,tip,totaltax,totaltip,totalbill;
```

▼ Complexity Test Cases

Test Case 1

CYCLOMATIC COMPLEXITY

1

Test Case 2

TOKEN COUNT

50

Test Case 3

NLOC

14

CODE:

```
//CH.SC.U4CSE24022
#include <stdio.h>
int main(){
    int billwt;
    float tax,tip,totaltax,totaltip,totalbill;
    scanf ("%d",&billwt);
    tax = 0.18*billwt;
    tip = 0.05*billwt;
    totalbill = (float)tax+tip+billwt;
    printf ("The Tax is %.2f\n",tax);
    printf ("The Tip is %.2f\n",tip);
    printf ("Total Bill With Tax and Tip is %.2f",totalbill);
}
```

OUTPUT:

```
521
The Tax is 93.78
The Tip is 26.05
Total Bill WIth Tax and Tip is 640.83
Process returned 0 (0x0)  execution time : 1.752 s
Press any key to continue.
```

734

The Tax is 132.12

The Tip is 36.70

Total Bill WIth Tax and Tip is 902.82

Process returned 0 (0x0) execution time : 2.016 s

Press any key to continue.

Problem Description(**float**)

Karthik was working in the HR division of Audi.

The employees of the company were working on shifts.

The company calculates salary for the employees on the basis of employee working hours per day.

Since the number of people working in the company is huge salary calculation become a tedious process at the end of the each day.

Constraints:

$1 \leq \text{hour} \leq 12$

$1 \leq \text{salaryperday} \leq 6000$

Input Format:

The First line of the input has a single value representing the total working hours of type integer.

The Second line of the input has single value representing the salary per day of type double.

Output Format:

Print the total salary in single line with two values after decimal point.

✓ Logical Test Cases

<p>Test Case 1</p> <p>INPUT (STDIN)</p> <pre>7 2945.89</pre> <p>EXPECTED OUTPUT</p> <pre>20621.23</pre>	<p>Test Case 2</p> <p>INPUT (STDIN)</p> <pre>11 5781.56</pre> <p>EXPECTED OUTPUT</p> <pre>63597.16</pre>
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▼ Mandatory Test Cases

<p>Test Case 1</p> <p>KEYWORD</p> <pre>double salaryperday,totsalary;</pre>	<p>Test Case 2</p> <p>KEYWORD</p> <pre>int hour;</pre>	<p>Test Case 3</p> <p>KEYWORD</p> <pre>%.2lf</pre>
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▼ Complexity Test Cases

<p>Test Case 1</p> <p>CYCLOMATIC COMPLEXITY</p> <pre>1</pre>	<p>Test Case 2</p> <p>TOKEN COUNT</p> <pre>54</pre>	<p>Test Case 3</p> <p>NLOC</p> <pre>11</pre>
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CODE :

```
//CH.SC.U4CSE24022
#include <stdio.h>
int main() {
    int hour;
    double salaryperday,totsalary;
    scanf ("%d",&hour);
    scanf ("%lf",&salaryperday);
    totsalary = (double)hour*salaryperday;
    printf("%.2lf",totsalary);
    return 0;
}
```

OUTPUT:

```
7
2945.89
20621.23
Process returned 0 (0x0)  execution time : 7.407 s
Press any key to continue.
```

```
11
5781.56
63597.16
Process returned 0 (0x0)  execution time : 104.929 s
Press any key to continue.
```

C	Session	Input & Output	Question Information	Level 2	Challenge 10
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Problem Description:

2022 was approaching and the world was about to end. So 2 gods Shiva and Jesus created the Cyberverse.

But this time disappointed with humans both the gods decided not to have humans in this world.

So they created a world of cyborgs.

A world without humans. Isn't it interesting? So let us dive into the cyberverse and have a look at their problems.

There are N kid cyborgs with Chief Cyborg '100gods' and he has K weapons with him.

He wants to distribute those K weapons among N kid cyborgs.

Since all the kid cyborgs are very good friends, so they set a rule among themselves for taking those weapons.

The rule states that the difference between kid cyborg having the maximum weapons and the kid cyborg having minimum weapons should be less than or equal to 1.

Find the value of the minimum number of weapons a kid cyborg can have when all the K weapons are distributed among them.

Constraints:

$$1 \leq N \leq 500$$

$$1 \leq K \leq 1000$$

Input Format:

Only line of input will contain two space-separated integers denoting N and K respectively.

Output Format:

Output a single line containing an integer X denoting the minimum number of weapons a kid cyborg can have in that test case.

✓ Logical Test Cases

Test Case 1	Test Case 2
INPUT (STDIN)	INPUT (STDIN)
29 326	127 895
EXPECTED OUTPUT	EXPECTED OUTPUT
11	7

✓ Mandatory Test Cases

Test Case 1	Test Case 2	Test Case 3
KEYWORD	KEYWORD	KEYWORD
int n,k;	scanf	printf

✓ Complexity Test Cases

Test Case 1	Test Case 2	Test Case 3
CYCLOMATIC COMPLEXITY	TOKEN COUNT	NLOC
1	55	7

CODE:

```
//CH.SC.U4CSE24022
#include <stdio.h>
int main() {
    int n, k;
    scanf ("%d%d", &n, &k);
    printf ("%d\n", k/n);
    return 1;
}
```

OUTPUT:

```
29 326
11

Process returned 1 (0x1)  execution time : 2.692 s
Press any key to continue.
```

```
127 895
7
```

```
Process returned 1 (0x1)  execution time : 3.987 s
Press any key to continue.
```