Practice Arena

Practice problems aimed to improve your coding skills.

- PRACTICE-02_SCAN-PRINT
- PRACTICE-03_TYPES
- LAB-PRAC-02_SCAN-PRINT
- LAB-PRAC-01
- PRACTICE-04_COND
- BONUS-PRAC-02
- LAB-PRAC-03_TYPES
  - FIFA Fever
  - Matrix Math
  - The Tale of Three Lines
  - Fiery FIFA Fever
  - The Final Rational
  - Quadratic Quandary
  - FIFA Fractions
  - Digit Dilemma
  - Recursive Recharge
  - Breaking the Lego Safe
  - The Final Rational Revisited
  - Developing an interest in interest
- PRACTICE-05_COND-LOOPS
- LAB-PRAC-04_COND
- LAB-PRAC-05_CONDLOOPS
- PRACTICE-07_LOOPS-ARR
- LAB-PRAC-06_LOOPS
- LAB-PRAC-07_LOOPS-ARR
- LABEXAM-PRAC-01_MIDSEM
- PRACTICE-09_PTR-MAT
- LAB-PRAC-08_ARR-STR
- PRACTICE-10_MAT-FUN
- LAB-PRAC-09_PTR-MAT
- LAB-PRAC-10_MAT-FUN
- PRACTICE-11_FUN-PTR
- LAB-PRAC-11_FUN-PTR
- LAB-PRAC-12_FUN-STRUC
- LABEXAM-PRAC-02_ENDSEM
- LAB-PRAC-13_STRUC-NUM
- LAB-PRAC-14_SORT-MISC

Recursive Recharge

LAB-PRAC-03_TYPES

Recursive Recharge [20 marks]

Problem Statement
Just as the factorial function is defined in terms of itself, we are defining a new function below. The function is defined on non-negative integers i.e. 0, 1, 2, 3, ...

$$f(0) = P$$

$$f(n) = f(n-1)^2 + \frac{n \cdot m}{\sqrt{v} + e}$$

The values of m, v, e, P will be provided to you as **integers**. Your job is to output f(1), f(2), f(3), f(4) in **different lines**. All your outputs should be rounded off to to **three decimal places**

Caution

1. Be careful about extra/missing lines and extra/missing spaces.
2. The inputs will be integers but the outputs may be non-integers.
3. Try using double values/double typecasting in case you are getting errors with float variables and float typecasting. Be careful that while %f works while printing doubles, when using scanf with doubles, always use %lf.
4. The integer v will always be given as positive but other integers M, e, P, may be negative.

HINTS:

1. The math.h library has been included for you as you may require it for the square root and other functions.

INPUT:
m, v, e, P

OUTPUT:
f(1)
f(2)
f(3)
f(4)

EXAMPLE:
INPUT
1, 2, 3, 2

OUTPUT:
4.227
18.317
336.182
113019.391

Grading Scheme:
Total marks: **[20 Points]**

There will be partial grading in this question. There are 4 lines in your output. Each will receive 25% of the total points if entered correctly. Each visible test case is worth 2 points and each hidden test case is worth 4 points. There are 2 visible and 4 hidden test cases.

Please remember, however, that when you press Submit/Evaluate, you will get a green bar only if all parts of your answer are correct. Thus, if your answer is only partly correct, Prutor will say that you have not passed that test case completely, but when we do autograding afterwards, you will get partial marks.

Start Solving! (/editor/practice/6026)