Kata

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- 2

  You have ranked up in Python!
  3 hours ago

  2

  You have ranked up in C!
  19 hours ago

  ---

  6 kyu

  Powerful you are. Your new overall rank is 6 kyu.
  2 weeks ago

  ---

  7 kyu

  Respect. Your new overall rank is 7 kyu.
  2 weeks ago

  

  100+ Honor: You now have the ability to weigh in on the ranking of

beta kata!
2 weeks ago

75+ Honor: You now have the ability to estimate the ranking of your own beta kata.
2 weeks ago

50+ Honor: You now have the ability to mark comments as having spoiler code.
2 weeks ago

25+ Honor: You now have the ability to vote on beta kata.
2 weeks ago

6 kyu
220

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Upgrade to Red

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6 kyu

Braking well

1521521477% of 340271 of 1,553g964
Python
Choose language...

C
Clojure
CoffeeScript
C++
Crystal
C#
Elixir
Forth (Beta)
Fortran (Beta)
F#
Go
Haskell
Java
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Julia (Beta)
Kotlin (Beta)
Nim (Beta)
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PHP
PowerShell (Beta)
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Python
R (Beta)
Racket (Beta)
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Ruby
Rust
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Shell
Swift
TypeScript

TrainNext Kata

Details
Solutions

Discourse (55)

Collect|

Share via email

* To:

* Subject:
Take the Codewars ch

* Message:
```
Hey,
<p>
  As a codewars beta
member I just
completed training
on the "Braking
well" kata. <a
href="www.codewars.c
om/r/GOaOcQ">Take
the initiation</a>
to join me and start
```
Send Cancel

Braking distance d1 is the distance a vehicle will go from the point when it brakes to when it comes to a complete stop. It depends on the original speed v and on the coefficient of friction mu between the tires and the road surface.

The braking distance is one of two principal components of the total stopping distance. The other component is the reaction distance, which is the product of the speed and the perception-reaction time of the driver.

The kinetic energy E is 0.5*m*v**2, the work W given by braking is mu*m*g*d1. Equalling E and W gives the braking distance: d1 = v*v / 2*mu*g where g is the gravity of Earth and m the vehicle's mass.

We have v in km per hour, g as 9.81 m/s/s and in the following we suppose that the reaction time is constant and equal to 1 s. The coefficient mu is dimensionless.

There are two tasks.

- The first one is to calculate the **total** stopping distance in meters given v, mu (and the reaction time t = 1).

  dist(v, mu) -> d = total stopping distance

- The second task is to calculate v in km per hour knowing d in meters and mu with the supposition that the reaction time is still t = 1.

  speed(d, mu) -> v such that dist(v, mu) = d.

#Examples:

dist(100, 0.7) -> 83.9598760937531

speed(83.9598760937531, 0.7) -> 100.0

#Notes:

- Remember to convert the velocity from km/h to m/s or from m/s in km/h when necessary.
- Don't forget the reaction time t: t = 1
- Don't truncate or round your results. See in "RUN SAMPLE TESTS" the function assertFuzzyEquals or dotest-....

- Shell: only dist is tested.

Fundamentals

These users have contributed to this kata:

- 
- 
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- 
- 

Similar Kata:

7 kyu
Simple Fun #13: Magical Well
66793% of 151453myjinxin2015

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-
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-
-
-

Beta
Well Done Multiplus
11077% of 4169rricardoar71 Issue Reported

Status:Testing & feedback needed

-

7 kyu
A Gift Well Spent
3131796% of 1481,014bkaes

-
-
-

8 kyu
Well of Ideas - Easy Version
1171174191% of 1,2218,876A.Partridge

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6 kyu
Well efficiency calculator
55187% of 4273Drymonade

-
-

Beta
How well did they score?
00060% of 2028onwordi2 Issues Reported

Status:Testing & feedback needed

Estimated Rank:
8 kyu

-

7 kyu
Well of Ideas - Harder Version
1616791% of 218941A.Partridge

-
-
-
-
-

6 kyu
Well, that's just (proto)typical! The Misadventures of Bob the Highly Paid Consultant #3
33292% of 2668PMV

-

Other Kata Authored By g964:

4 kyu
Undirected acyclic weighted graph
2323690% of 1536g964

-

6 kyu
Hidden "Cubic" numbers
98981787% of 193887g964

6 kyu
Floating-point Approximation (I)
52522278% of 153606g964

6 kyu
Experimenting with a sequence of complex numbers
16161086% of 47169g964

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Stats:

Created	Nov 30, 2015
Published	Nov 30, 2015
Warriors Trained	10034
Total Skips	3896
Total Code Submissions	8904
Total Times Completed	1553
Ruby Completions	45
Python Completions	271
JavaScript Completions	144
Java Completions	198
C# Completions	100
CoffeeScript Completions	1
Haskell Completions	43
Clojure Completions	32
TypeScript Completions	22
C++ Completions	247
PHP Completions	50
Elixir Completions	32
Crystal Completions	2
F# Completions	17
C Completions	117
OCaml Completions	12
Rust Completions	73
Swift Completions	35
Go Completions	95
Shell Completions	36

R Completions	16
Kotlin Completions	23
Fortran Completions	10
Julia Completions	10
Scala Completions	10
PowerShell Completions	1
Nim Completions	1
Reason Completions	3
Racket Completions	5
Forth Completions	5
Prolog Completions	2
Total Stars	152
% of votes with a positive feedback rating	77% of 340
Total "Very Satisfied" Votes	220
Total "Somewhat Satisfied" Votes	85
Total "Not Satisfied" Votes	35