


Kata

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3 hours ago
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[You have ranked up in C!](#)
19 hours ago
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 - 6 kyu
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2 weeks ago
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 - 7 kyu
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 - [100+ Honor: You now have the ability to weigh in on the ranking of](#)

[beta kata!](#)

2 weeks ago

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[6 kyu](#)

[220](#)

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6 kyu

Braking well1521521477% of 340271 of 1,553 [g964](#)

Python

Choose language...

C
Clojure
CoffeeScript
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C#
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Forth (Beta)
Fortran (Beta)
F#
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Haskell
Java
JavaScript
Julia (Beta)
Kotlin (Beta)
Nim (Beta)
OCaml (Beta)
PHP
PowerShell (Beta)
Prolog (Beta)
Python
R (Beta)
Racket (Beta)
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Ruby
Rust
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Shell
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TypeScript

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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/G0a0cQ">Take
the initiation
to join me and start

Send

Cancel

Braking distance d_1 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 μ 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 $0.5 \cdot m \cdot v^2$, the work W given by braking is $\mu \cdot m \cdot g \cdot d_1$. Equalling E and W gives the braking distance: $d_1 = v^2 / 2 \cdot \mu \cdot g$ 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 μ is dimensionless.

There are two tasks.

- The first one is to calculate the **total** stopping distance in meters given v , μ (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 μ with the supposition that the reaction time is still $t = 1$.

$\text{speed}(d, \mu) \rightarrow v$ such that $\text{dist}(v, \mu) = d$.

#Examples:

$\text{dist}(100, 0.7) \rightarrow 83.9598760937531$

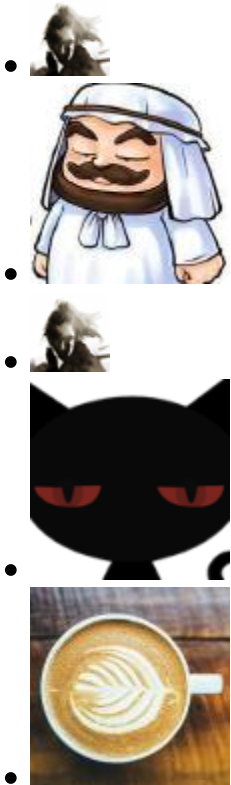
$\text{speed}(83.9598760937531, 0.7) \rightarrow 100.0$

#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:



Similar Kata:

7 kyu

[Simple Fun #13: Magical Well](#)

66793% of 151453 [myjinxin2015](#)

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Beta

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Status: Testing & feedback needed

-

7 kyu

[A Gift Well Spent](#)

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6 kyu

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Beta

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Status:Testing & feedback needed

Estimated Rank:

8 kyu

-

7 kyu

[Well of Ideas - Harder Version](#)

1616791% of 218941[A.Partridge](#)

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6 kyu

[Well, that's just \(proto\)typical! The Misadventures of Bob the Highly Paid Consultant #3](#)

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Other Kata Authored By [g964](#):

4 kyu

[Undirected acyclic weighted graph](#)

2323690% of 1536[g964](#)

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52522278% of 153606g964

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6 kyu
[Experimenting with a sequence of complex numbers](#)
16161086% of 47169 [g964](#)

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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

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