

More Math Methods...

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Java

Review

What parameters went into the findmid method?

What was returned by findmid?

inputs

outputs

int a

int b

int c



int answer

```
public static int findmid(int a, int b, int c)
{
    int answer;
    //blah, blah, blah
    return answer;
}
```

inputs

outputs

?



contains

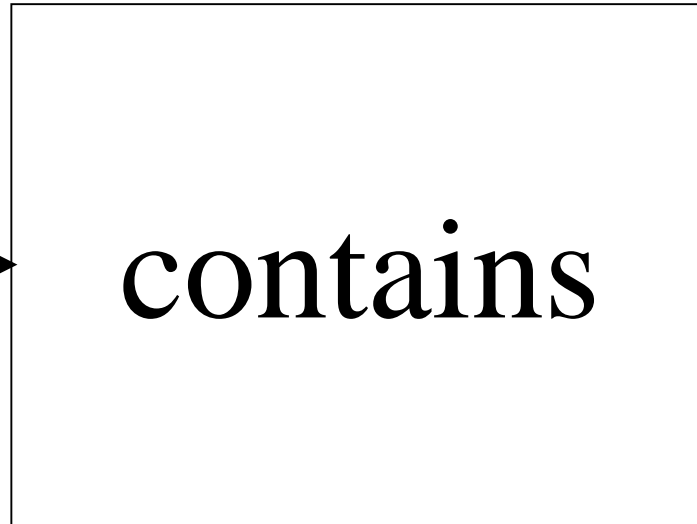


?

inputs

outputs

Rectangle



boolean

inputs

outputs

?



translate



?

inputs

outputs

double
double



translate



nothing

inputs

outputs

?



square
root



?

inputs

outputs

double



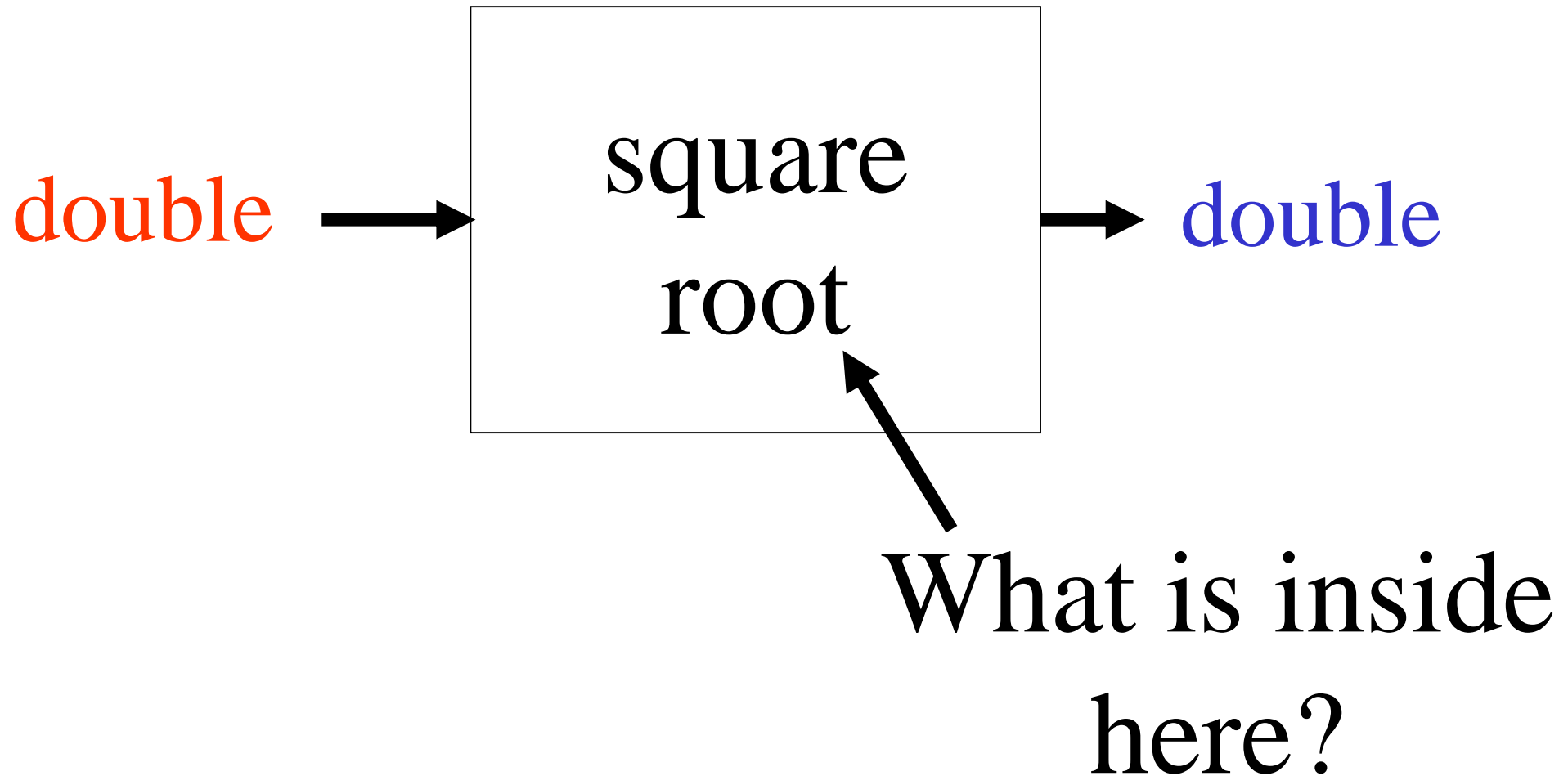
square
root



double

inputs

outputs



Square Root ALGORITHMS

(what is a square root?)

(what is an ALGORITHM?)

Square Root ALGORITHMS

(what is a square root?)

The square root of a non-negative real number x is that non-negative real number which, when multiplied by itself, gives x .

(what is an ALGORITHM?)

A procedure for solving a mathematical problem.....

(Webster's)

Does anybody know
a square root algorithm?

How does it work?

Square Root ALGORITHMS

Babylonian Method

$$r \cong \sqrt{x}$$

1. Start with an arbitrary positive start value r (the closer to the root the better)
2. Replace r by the average of r and x/r
3. Go to 2

Lab

a) add a square root method to the CVMATH class.

b) the method should be accurate to six decimal places

c) call the method from psvm

$\sqrt{2} \cong 1.4142135623730950488016887242096\dots$

Hints

- The following numbers are accurate to six decimal places:
- Keep iterating until the first six numbers after the decimal don't change between estimates

1.4142135623730950488016887242096....

1.4142137392953258450985085093455....