

```
1 def sqrt(x, guess = 1.0):
2     if x < 0:
3         # print("Got a request for square root of negative number.")
4         raise ValueError
5
6     # print("Find sqrt of {} starting with guess {}".format(x, guess))
7     if good_enough(guess, x):
8         return guess
9     else:
10        # print("Guess isn't good enough. Improve ...")
11        new_guess = improve_guess(guess, x)
12        return sqrt(x, new_guess)
13
14 def good_enough(guess, x):
15     # print("Checking if {} is a good enough guess.".format(guess))
16     if abs(guess * guess - x) < 0.1:
17         return True
18     else:
19         return False
20
21
22
23 def avg(a, b):
24     return (a+b)/2.0
25
26 def improve_guess(guess, x):
```