Square Root Algorithm

Trying to find the square root of $x$

1. Start with a guess $g$

2. if $g \times g$ is close enough to $x$ then STOP

3. else
   # a new value for guess
   $g = (g + x / g) / 2$

REPEAT (go back to 2)

one way of implementing close enough is

round( $g \times g \times 100$ ) = $x \times 100$