

Quiz

4 BONUS MARKS FOR THE FIRST 5 CORRECT ANSWERS ONLY

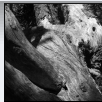


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Lecturer

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Quiz

The midpoint formula,

$$\frac{1}{2h} (f(x+h) - f(x-h)),$$

does not generally produce better approximations in finite-precision arithmetic to the first-order derivative $f'(x)$ as the step-size h gets too small, because in that case the round-off error will dominate the calculations.

Determine the optimal step-size h^* that minimizes the total error bound.

Submit your solutions ONLY to my personal email address:

kareem.elgindy@gmail.com.