q1. (5 pts **extra credit applied directly to this quiz**) which of the following methods of (primarily) integration have you already studied before this course? circle what applies.

trapezoid rule → simpsons ⅓ rule → simpsons ⅜ rule → any quadrature methods →

numerical methods for ODES → numerical methods for PDES

q2. (5 pts) what is the benefit of richardson extrapolation? be as specific as you can.

q3. (5 pts) what popular python library contains a <u>non-deprecated</u> method for romberg integration? name the function and explain its <u>non-optional</u> arguments.

q4. (5 pts) what popular python library contains a <u>non-deprecated</u> method for adaptive quadrature? name the function and explain its <u>non-optional</u> arguments.

q5. (5 pts) what popular python library contains a <u>non-deprecated</u> method for gaussian quadrature? name the function and explain its <u>non-optional</u> arguments.

q6. (5 pts extra credit) the deprecated methods referenced above, when are they set to expire?

btw, short quiz = long lecture.