

Section 2: Numerical integration

Crucial points

- 1. Make sure you use the formula for the trapezium rule correctly**
Remember the 2's in the formula (multiply all the middle numbers by 2 and divide the whole answer by 2 at the end).
- 2. Draw a sketch graph**
You need to know whether a function is convex or concave, so that you can tell whether the trapezium rule will give an overestimate or an underestimate. Remember that the second derivative can also be helpful.
- 3. Be careful with limits when estimating with rectangles**
Again, a sketch graph will help. When using areas to estimate integrals, draw a few rectangles at each end of the area, and make sure that you know how many rectangles there should be.