

CAT

1. Let

$$f(x) = 5x^2 + 3x - 4, \quad (1)$$

and

$$g(x) = -4x^2 + 6x + 5. \quad (2)$$

- (a) Plot the functions $f(x)$ and $g(x)$ for $x \in [-2, 2]$ on the same graph.
 - (b) Find the points of intersection of the curves.
 - (c) Find the area bounded by the two curves.
2. Calculate a numerical approximation to this area using the functions `trapz` and `linspace` with (a) 10 gridpoints, (b) 100 gridpoints.
3. Using `linspace`, approximate the area by writing your own trapezium rule solver. Compare your results with those in Q2.