

M353 5.5 GaussQ (S. Zhang) .

1. (5.5:a1) (1) Determine the smallest N for which the Gauss-Legendre integral G_N is exact.
- (2) Determine the smallest J for which the Romberg integral R_{JJ} is exact.

(a) $\int_0^{2\pi} (8x^7 - 1) dx$

(b) $\int_1^{\sqrt{2}} (11x^{10} + \sqrt{5}x) dx$