

Further Pure 1 Numerical Methods

Given that  $f(x)$  is a quadratic function and that  $f(1) = 15$ ,  $f(2) = 18$  and  $f(3) = 19$ .

Find the value of

$$\int_1^3 f(x) dx$$

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By Simpson's rule

$$\int_1^3 f(x) dx = \frac{1}{3} (15 + 4 \times 18 + 19) = \frac{106}{3}$$

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