punto 10

Luis Esteban Castro Bernal

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sea

$$E = \frac{f^{(4)}(\xi)}{4!} \int_a^b (x-x_0)(x-x_1)(x-x_2)(x-x_3)dx = -\frac{3}{80}h^5 f^{(4)}(\xi)$$

se realiza la integral de la siguiente manera

$$L = \int_0^{3h} (x)(x-h)(x-2h)(x-3h)dx = \int_0^{3h} x^4 - 6hx^3 + 11h^2x^2 - 6h^3xdx$$

$$= \frac{x^5}{5} - \frac{3hx^4}{2} + \frac{11h^2x^3}{3} - 3h^3x^2 \Big|_0^{3h} = \frac{(3h)^5}{5} - \frac{3h(3h)^4}{2} + \frac{11h^2(3h)^3}{3} - 3h^3(3h)^2 = -\frac{9}{10}h^5$$

entonces remplazando la integral queda

$$E = \frac{f^{(4)}(\xi)}{4!}(-\frac{9}{10}h^5) = -\frac{3}{80}h^5 f^{(4)}(\xi)$$