Sequence and series – A2 Mathematics P2

1. June/2022/Paper_7357/02/No.5

The binomial expansion of $(2+5x)^4$ is given by

$$(2+5x)^4 = A + 160x + Bx^2 + 1000x^3 + 625x^4$$

(a) Find the value of A and the value of B.

[2 marks]

(b) Show that

$$(2+5x)^4 - (2-5x)^4 = Cx + Dx^3$$

where C and D are constants to be found.

[2 marks]

(c) Hence, or otherwise, find

$$\int \left((2+5x)^4 - (2-5x)^4 \right) \mathrm{d}x$$

[2 marks]