Spring 2021 Free Response Chapter 07.05 Gauss Quadrature Rule

A scientist uses the following quadrature rule to integrate functions with fixed limits of integration.

$$\int_{5}^{15} f(x) \, dx \cong \mathcal{C}f(10),$$

If the quadrature rule is expected to give the exact value of the integral for the functions of the form be^x , then what is the value of C?

Answer: 148.41