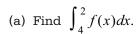## Module 7: Applying Procedures for Integration by Substitution

The function f is defined on the closed interval $[0, 10]$. The graph of f consists of a semicircle and two line segments and is shown in the figure on the right.

(a) Find $\int_4^2 f(x)dx$.

(b) Find the average value of f over the interval $[0, 8]$.

(c) Find $\int_8^{10}\left[e^{-3x} - f(x)\right]dx$.

(d) Find $\int_0^3 x\, f(x^2)dx$.

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