

**Exercise 6**

In Exercises 6 through 11, use the formal method, involving an infinite series of residues and illustrated in Examples 2 and 3 in Sec. 89, to find the function  $f(t)$  that corresponds to the given function  $F(s)$ .

$$F(s) = \frac{\sinh(xs)}{s^2 \cosh s} \quad (0 < x < 1).$$

$$\text{Ans. } f(t) = x + \frac{8}{\pi^2} \sum_{n=1}^{\infty} \frac{(-1)^n}{(2n-1)^2} \sin \frac{(2n-1)\pi x}{2} \cos \frac{(2n-1)\pi t}{2}.$$