From problem 2-2 we have

$$S_{cl} = \frac{m\omega}{2\hbar \sin(\omega T)} \left((x_b^2 + x_a^2) \cos(\omega T) - 2 x_b x_a \right) \tag{1}$$

From equation (3.51)

$$K = F(T) \exp\left(\frac{i S_{cl}}{\hbar} \right) \tag{2}$$

Substitute (1) into (2).

$$K = F(T) \exp\left(\frac{im\omega}{2\hbar \sin(\omega T)} \left((x_b^2 + x_a^2) \cos(\omega T) - 2 x_b x_a \right) \right)$$