

Ex 10a) $E = \frac{m}{2} \left(\frac{dx}{dt} \right)^2 + V(x)$

$$\therefore \sqrt{\frac{2(E - V(x))}{m}} = \frac{dx}{dt}$$

$$\therefore \int_0^{T/4} dt = \sqrt{\frac{m}{2}} \int_a^0 \frac{dx}{[V(a) - V(x)]^{1/2}}$$

{ since $E = V(a)$ }

$$\therefore T = 4 \sqrt{\frac{m}{2}} \times \int_a^0 \frac{dx}{(V(a) - V(x))^{1/2}}$$