In the term for the final time of the first movement segment, inside the $ln(\cdot)$, there is a missing k multiplying the initial velocity condition. This typo is repeated throughout the paper in the appropriate places: Eq. (21), Eq. (35) and Eq. (45). The correct form for Eq. (21) is then:

$$t_1 = \frac{1}{\sqrt{2kU}} \ln\Big(\frac{\sqrt{2kU} - x_{20}k}{\sqrt{2kU} + x_{20}k} \frac{\sqrt{2kU} + Vk}{\sqrt{2kU} - Vk}\Big).$$

for Eq. (35):

$$t_1(\hat{V}) = \frac{1}{\sqrt{2kU}} \ln\Big(\frac{\sqrt{2kU} - x_{20}k}{\sqrt{2kU} + x_{20}k} \frac{\sqrt{2kU} + \hat{V}k}{\sqrt{2kU} - \hat{V}k}\Big).$$

and for Eq. (45):

$$\begin{aligned} t_f = & \frac{1}{\sqrt{2kU}} \ln\Big(\frac{\sqrt{2kU} - x_{20}k}{\sqrt{2kU} + x_{20}k} \frac{\sqrt{2kU} + \tilde{V}k}{\sqrt{2kU} - \tilde{V}k}\Big) \\ & + \sqrt{\frac{2}{kU}} \tan^{-1}\Big(\frac{\sqrt{2k^3U}(\tilde{V} - x_{2f})}{2kU + x_{2f}k^2\tilde{V}}\Big). \end{aligned}$$

In the first coefficient a, of Eq. (41), there is a typo in the power of k in the first term (should be 5 instead of 3), the correct expression is:

$$a = (2k^5U)(1 + \tilde{k}) + k^6(\tilde{k}x_{2f}^2 - x_{20}^2)$$