EE 231 first semester AY2021-2022 : Homework 04

Given the following first order system.

$$r(t) \longrightarrow \boxed{\dfrac{k}{s+a}} \longrightarrow y(t)$$
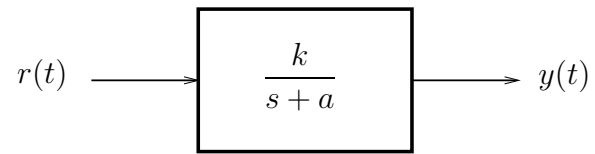
1. Assuming a step input, derive the equation for the rise time T_r. Show your complete derivation. Your final expression should only contain one logarithm term. Hint. T_r is approximately equal to $2.2/a$.

2. Assuming a step input, derive the equation for the delay time T_d. Show your complete derivation.